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The Journal OF THE Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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GRAND RAPIDS, MICH., AUGUST, 1921

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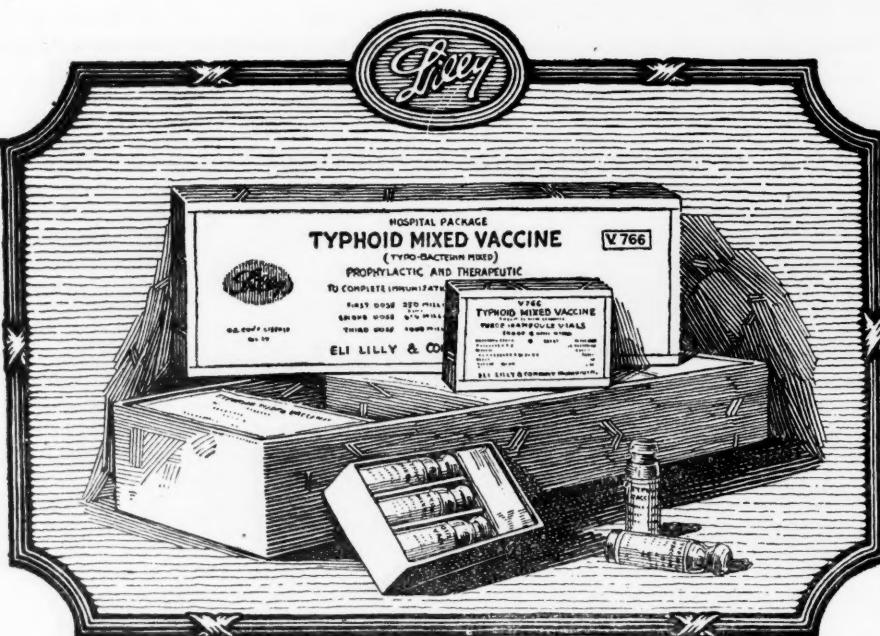
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The Journal OF THE Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Vol. XX

GRAND RAPIDS, MICHIGAN, AUGUST, 1921

No. 8

Original Articles

A LOCAL TONSILLECTOMY TECHNIC.

JAMES MILTON ROBB, M. D., F. A. C. S.
DETROIT, MICH.

The following method of local tonsillectomy has proven so satisfactory, compared with other methods we have used, that we are presenting it here for the consideration of those who might wish to try it. The operative essentials of this method were devised by Dr. Mathews, formerly of the Mayo Clinic; however, it is doubtful if the advantages of this technic have been sufficiently brought to the attention of the men in this vicinity.

PREPARATION OF THE PATIENT.

The psychology of the situation in local tonsil work is so important that we make as little of the preparation as possible. If the patient is to be operated upon, in the morning, we advise a light breakfast. The stimulation of coffee is a good thing under the circumstances, especially if the patient is used to it; if not accustomed to it, while the stimulation would be advantageous at the time, the tendency to sleeplessness later proves undesirable.

When possible, it is desirable to have the patient remain dressed except for the removal of some of the outside clothing, such as the coat, collar, etc., which might become soiled. They are much less conscious of being prepared for an operation if their street clothes are not removed.

Just before leaving their room, we prefer that the majority of patients have a hypodermic of hyoscine morphine and cactin, the ordinary H. M. C. No. 2.

While waiting outside the operating room, or better still, while in their room, the pillars and surrounding areas are painted with a solution of 10% cocaine on an applicator wrung out fairly dry. This is done three times, at intervals of about five minutes.

Care is taken to instruct the patient to expectorate any saliva after the application, to prevent an excess of cocaine from being swallowed. We prefer to have the instruments and everything in the operating room all ready before the patient enters, then the injection of the tonsil areas can be started as soon as the patient is in the chair and from this time he has no leisure for his mind to dwell on the instruments and other operating room paraphernalia.

We like to have the patient sit in a straight backed chair with the hips well back so the tendency may be to lean slightly forward. The patient is covered with a sterile gown and a sterile towel is placed over the hair. He holds a sterile basin in his lap, in which to expectorate. When working in our own hospital a running water cuspidor is swung in front of the patient and is very satisfactory, for it immediately carries away any blood which also relieves the psychological situation.

For injecting the tonsillar area we use one-tenth of one per cent cocaine with one minim of adrenalin, per dram of solution. We have our solutions sterilized and cultures taken frequently to insure sterility as far as possible. Since sterilizing our own solutions, we very seldom have an infection. Solutions should be prepared by reliable people, since too strong a solution is very dangerous as is also an infected solution. There is little danger of the solution being too weak for we have used plain sterile water for injection with equally good results. A nurse or an assistant supports the patient's head and wipes away any saliva and blood which may cling to the lips. This gives the patient a feeling of assurance and the head is better controlled.

We prefer to sit squarely in front of the patient, using the finger only as a tongue depressor while injecting. This causes less fright and gagging than by the use of the ordinary tongue depressor.

One syringe full of solution is injected behind the capsule of the tonsil in each of

the four positions represented in the accompanying illustrations, (Fig 3), viz; at the area of the upper and lower poles and behind and into the anterior and posterior

along the border of the posterior pillar (Fig 6) in the same manner and without, as a rule, removing the knife during the procedure. The tonsil is then grasped by the



Fig 1



Fig 2



Fig 3

pillars. We always inject both tonsillar areas before starting the dissection.

As a rule only the instruments illustrated, (Fig 2), however a needle is always at hand to be used if necessary.

OPERATION.

With a knife devised on the order of the Robertson knife, (Fig 2) after the pillars are put somewhat on the stretch by the

tenaculum and the superior pole drawn forward while with the flat surface of the curved knife the fascia of the superior constrictor muscle is peeled back by pressure from the capsule of the tonsil, down to its base, see (Fig 7). Then the tenaculum is released and the patient is allowed to expectorate if necessary. Immediately after this the tonsil is grasped through the loop



Fig 4



Fig 5



Fig 6

tongue depressor (Fig 4 and 5) an incision is made along the margin of the anterior pillar, beginning at the base and extending to the upper pole. Immediately after reaching the upper pole the incision is carried downward

in the snare and enucleated. (Fig 8) Usually there is very little immediate bleeding. With a swab on a hemostat applied over the base of the fossa, (Fig 9) a free surface will be revealed and it is easily

determined whether all the tonsillar tissue has been removed. If not, it is readily picked up by the tenaculum and removed. The right tonsil is removed in a like manner.

The routine of the procedure is similar to that followed in our general tonsillectomy method and logical for the same reasons as described in the article published.* June 1919. The incision around the tonsil allows the snare to enter only in the area of cleavage between the capsule of the tonsil and the fascia of the superior constrictor muscle. The tonsil is therefore almost invariably entirely removed and that

night, care being taken, however, that the patient does not become too drowsy to be cognizant of even a little bleeding. I would state here that the percentage of our past operative hemorrhages is very small with this method. Not more frequent than when operated under general anaesthesia.

A substantial breakfast of semi-solid foods is served the following morning, preceded by a warm throat irrigation. Patients very seldom refuse to eat and by taking food as early as possible at least by the morning following the operation, the tendency to stiffness of the throat is much lessened.

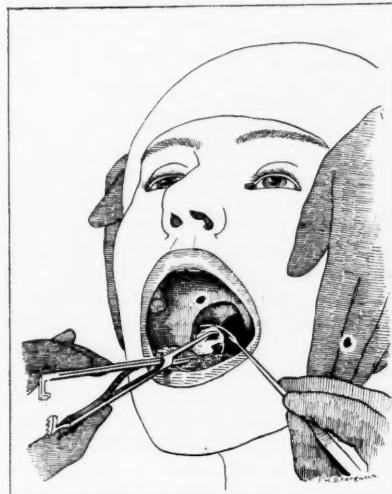


Fig. 7

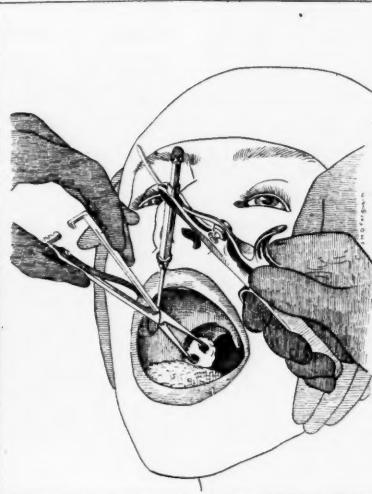


Fig. 8



Fig. 9

without getting into the tonsillar plexus of veins, which lies just beneath the covering of the muscle.

If the dissection is done by means of scissors, as clean an operation can usually be performed, but there seems to us to be much more liability of cutting into the venous plexus and besides it takes considerably more time.

The average time of operation with this method has come to be from one to four minutes after the injection is done. This rapidity combined with clean dissection is most gratifying to the patient and surely is to the surgeon.

POST-OPERATIVE CARE.

If for any reason an H. M. C. No. 2 hypodermic has not been given before the operation then something should be given as soon as the patient returns to his room for there will surely be considerable pain, which, with consequent tossing about on the bed may establish bleeding. Some opiate should be ordered quite freely for the first day and

Plenty of nourishment buoys up the spirits of the patients and lessens the tendency to an introspective, sick attitude. After the first day a warm saline throat irrigation every three hours for two or three days is very gratifying.

To summarize the advantages of this technic we would state that:

1. It is rapid.
2. It is anatomically logical.
3. There is a minimum of psychic shock

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VACCINE TREATMENT OF ASTHMA*

A. D. WICKETT, M. D.
C. CORLEY, M. D.
J. T. CONNELL, M. D.
ANN ARBOR, MICH.

The first consideration in the discussion of the treatment of asthma must necessarily be in regard to diagnosis. It is not our purpose to enter into a lengthy discussion of differential diagnosis. We have considered necessary for a diagnosis of asthma, first;

(*Journal of the Michigan State Medical Society.)

*Read before Section on Medicine, M. S. M. S., 57th Annual Meeting, Bay City, May, 1921.

A history of attacks of dyspnea without exertion and not relieved by rest; second: The physical signs of bronchial asthma on examination during the attack.

Granted the diagnosis of asthma, it is of extreme importance to determine whether the patient has pulmonary tuberculosis. Owing to the difficulties in physical diagnosis of tuberculosis in the presence of emphysema, we have made a rule that all asthmatics must have a chest X-ray.

II. SELECTION OF MATERIAL FOR VACCINE.

We have regarded bronchial asthma as the sequel of focal infection, and have sought for a primary focus mainly in the tonsils, accessory sinuses and in the bronchi. Each patient is examined by an otolaryngologist and plates of the sinuses are made. The focal infection is treated surgically if possible, and as much of the infection eradicated as seems advisable. If the individual has septic tonsils and no other focus, the tonsils are removed and cultured, and a vaccine prepared for treatment. If there are septic tonsils and sinus infection, both are treated surgically and a vaccine prepared from the tonsil culture. Many of our patients have had their tonsils removed before they appear for examination, and if we find signs of infection in the sinuses, a culture is obtained at the time of operation and provides the material for vaccine. In case the tonsils have been removed and there are no signs of infection of sinuses or middle ear, we culture from the sputum we always seek for a cast or spiral or other solid material which we presume has come from the bronchi. So far in our work we have had no occasion to regard the teeth as the cause of bronchial asthma, although we are in daily expectation of observing such a case.

III. METHOD OF PREPARATION.

The medium used for the preparation of this vaccine is two per cent peptone broth with a P H 7.6 to which ten per cent of rabbit serum has been added. This is inoculated with material from the tonsil, sinus or sputum, and incubated for twenty-four hours. If the growth is good, it is then diluted with sterile physiological salt solution, to a concentration of two hundred million organisms per cubic centimeter. This standardized vaccine is now placed in sterile test tubes and these are sealed off in a flame, and when cool, immersed in a water bath at 60 degrees for one hour. It is then tested for sterility and if sterile it is ready for use.

IV. DOSAGE

The vaccine is prepared in the strength

of 200,000,000 bacteria per cubic centimeter. The initial dose is routinely 50,000,000 bacteria; second, 100,000,000; third, 150,000,000 and fourth and succeeding doses, 200,000,000. The interval between doses is from five to seven days, which we have found to be satisfactory after trying shorter and longer intervals.

In the administration of the vaccine, two types of reaction may be observed; first: A local reaction which consists of induration and redness at the site of inoculation. The general reaction is an attack of asthma coming on within one hour after the injection. In case of mild reaction the previous dose is repeated. If the reaction is severe, a smaller dose is used for the following injection. Treatment is continued for several weeks after the patient is free from asthma.

TONSIL GROUP

CASE I.

M. T. Male. Age 45. Carpenter.

Patient appeared here October 5th, 1920, complaining of cough and wheezing respiration.

He had pleurisy in the right axilla six years ago; influenza in October, 1919, and had a winter cough since 1897. During the past summer this cough has persisted. His first attack of asthma was September 30th, 1920, and he has had more or less asthma continuously since then with occasional severe exacerbations. On examination he has pyorrhea, septic tonsils, atrophic rhinitis, cervical adenitis, and pulmonary emphysema, with squeaks and groans more prominent on expiration. X-ray of the sinuses reveals chronic ethmoid disease. Skin tests were negative, ten proteins used.

His tonsils were removed and a culture prepared from the tonsil. Patient was treated with vaccine prepared from this culture beginning October 18th and showed marked improvement, about 90 per cent. After six treatments, patient did not return as he considered himself cured. In February, 1921, he had an acute bronchitis with slight morning wheezing and returned for two treatments and has not appeared since that time. He is completely relieved.

CASE II.

W. P. C. Male. Age 21. Student.

Present illness began at the age of six in September, with characteristic symptoms of hay fever, and disappeared with the frost. The following year he developed hay fever and asthma in the spring, which would come on when the trees blossomed and disappear after the blossoms fell. He would be free from trouble during the summer, but would have hay fever and asthma again in the fall and this would disappear with the frost. His present attack of asthma came on in the first week in November and is the first attack he has had outside of the pollen season. Skin tests with ragweed dilution, 1-100 produced a wheal 14 x 12 m.m.; 1-1000, 8 x 11 m.m.

On examination there were septic tonsils and the characteristic signs of bronchial asthma. The tonsils were removed, a culture taken and a vaccine prepared from the culture. He received his first treatment December 4th, 1920, 50,000,000 bacteria and his last on January 22nd, 1921, total-

ing 1,250,000,000. He has had no asthma since his first treatment, January 22nd, 1921, his skin tests were repeated. The ragweed 1-100 produced a wheal 7 m.m. in diameter and 1-1000, 5 m.m. For the first time in four years he has gone through the spring season without hay fever. His asthma and spring hay fever are completely relieved.

CASE III.

H. C. Male. Age 37. Laborer

November 16th, 1920, he appeared for examination. He gives a family history of tuberculosis. He had scarlet fever at the age of twelve and has had measles and influenza.

Since the attack of scarlet fever he has had a dry cough and dyspnea on exertion, wheezing and especially difficulty on expiration. His trouble comes in attacks which are perennial, but occur more often in the fall and spring than in the summer and winter. The attacks have caused considerable loss of sleep.

On physical examination we find septic tonsils and the characteristic signs of bronchial asthma with emphysema. X-ray of the chest and accessory sinuses is negative. Tonsils were removed November 22nd, and on November 27th he received his initial treatment of 50,000,000 bacteria. He received nine treatments, totaling 1,300,000,000, the last on January 22nd. During this time he caught cold and had a severe cough without asthma. Patient reports that his present condition is the best since childhood. He is completely relieved.

CASE IV.

J. B. Male. Age 35. Lather.

Patient has had bronchial asthma ever since he can remember. The attacks are perennial and his last severe attack was one week before the time of examination. His tonsils were removed and cultured and on April 7th he received the initial dose of 50,000,000, and reports that although he had been having attacks daily up to that time, he has had no asthma since, is gaining weight and feels much better than he has in years.

We have completed the treatment of only five cases in the tonsil group. Four show complete relief. The other will be discussed in the tuberculosis group.

SINUS GROUP

CASE V.

F. S. Female. Age 38. Housewife.

Her chief complaint is shortness of breath, wheezing and coughing. She has had the usual children's diseases and a fracture of the right femur in childhood, pleurisy at the age of eighteen and several severe attacks of tonsillitis. She has had considerable gastro-intestinal disturbance, nausea and belching of gas, associated with her present illness. Average weight, 100 lbs., present weight, 75 lbs.

In May, 1918, she had an attack of influenza, which confined her to bed for four days, following which she had a cough. Ten days after she got up she had her first attack of asthma, which came on in the night while asleep. For the next six weeks she was unable to sleep in bed and was obliged to take her sleep sitting up in a chair on account of severe asthma. Morphine was required to relieve the attacks. After six weeks the attacks ceased, until January, 1920. At this time, follow-

ing an operation on her son, she had a series of attacks entirely similar to the first in every way, except that they were more severe and persisted for eight weeks. During this time she became so weak it was necessary to have a nurse care for her. The third series of attacks began March 15th, 1920, and persisted until her present admission to the hospital, and have been gradually increasing in severity. In these attacks also, relief was obtained by morphine.

On examination she is rather emaciated and the chest presents characteristic signs of bronchial asthma. The attacks persisted while in the hospital and were relieved by adrenalin. Her chest is negative except for emphysema, asthma and chronic bronchitis. X-ray of the sinuses demonstrates pan sinusitis. Her heart was normal. Tonsils were removed and cultured. Two weeks later the ethmoid cells were operated upon, following which she had a high fever and severe asthma. On March 30th she reports that she was feeling quite weak, and weighed 78 lbs., and she received her first treatment of 50,000,000 from the culture obtained from her tonsils. During the next five days she had two light attacks of asthma, but was able to sleep at night and feels much better. On April 4th, she received 100,000,000 bacteria, following which she had no asthma. Her appetite improved and she could sleep at night and one day walked two miles. On April 11th she had the third treatment, following which the vaccine was sent to her home physician to continue the treatment. Following her sixth treatment she had a marked general and local reaction and since then has discontinued treatment. This is regarded as an unfinished case.

CASE VI.

J. R. B. Male. Age 51. Book Publisher.

Patient's chief complaint is itching and swelling of the extremities and face, and asthma.

For the past ten years he has had asthma whenever he has caught cold. He has had a pan sinusitis with radical operation on the right frontal and removal of the nasal wall of the left antrum. He has had a bilateral otitis media and when he appeared at the Otolaryngological Clinic three years ago he could hold his nose and blow pus out of both ears. His asthma was very severe and for the past year nearly constant. During the summer of 1920 he developed a painful smooth white swelling of the right foot, which persisted for two days and he has had similar attacks in both legs, both arms and both hands and at one time the upper lip was swollen about three times its normal size. Examination revealed characteristic signs of bronchial asthma and a swelling of the hand of the type called angioneurotic edema. He has also had urticaria.

A vaccine was prepared from culture obtained from the left maxillary sinus, and January 10th, 1921, he received the initial dose of 50,000,000. Since January 15th, 1921, when he received his second dose, he has had no asthma, no urticaria and no angioneurotic edema except one small wheal, which occurred on the foot March 5th and persisted for about one hour. In addition to this, the discharge from the left side of the nose has disappeared; consequently on March 26th he was given a vaccine obtained from the right side of the nose and reports on April 9th that there is a very marked decrease in the discharge from his right nostril. His asthma, urticaria and angioneurotic edema are completely relieved. He has no dis-

charge from the left side of his nose and very little from the right.

SPUTUM GROUP

CASE VII.

L. G. Female. Age 24. Housewife.

Patient appeared for examination August 30th, 1920, complaining of attacks of difficult breathing.

She had scarlet fever at the age of four. Her present illness began in July, 1919, with an attack of difficult breathing so severe that she became markedly cyanotic. She states that her great difficulty was in expiration. She has tried burning several asthma powders and obtained relief from attacks, but they returned as before.

Physical examination showed small septic tonsils, deviated septum, nasal polyps, tooth abscess and bronchial asthma. X-ray of the chest was characteristic of chronic bronchitis and emphysema. Her tonsils and polyps were removed in August, 1919, and she was given several expectorant cough mixtures without any change in her condition.

Vaccine was prepared from her sputum. She received her initial dose February 26th, 1921, before which she had had asthma all week. During the following week she had one light attack. The week following the second injection she had two slight attacks and the week following her third injection she had no attacks.

CASE VIII.

G. S. Male. Age 55. Proprietor, grocery store.

Patient's chief complaint is attacks of difficulty in breathing.

He had malaria at the age of 20, smallpox at the age of 36. In October, 1919, he had influenza and in November, 1919, he had a heavy cold, which was also thought to be an attack of influenza. During this second attack he developed asthma, with attacks coming on every day and lasting from two to seven hours. For the past six months adrenalin in doses of five to seventy-five drops were necessary to relieve the attacks. Between attacks there is no difficulty in respiration or dyspnea on exertion. On examination there is a marked arterial sclerosis and the chest presents characteristic signs of asthma, chronic bronchitis and emphysema. He has lost fifty pounds in weight during the past year and is quite weak. There is no evidence of pulmonary tuberculosis.

A vaccine was prepared from the sputum and on October 4th, he received his first injection of 50,000,000, following which he had asthma, but a rather light attack. The attacks persisted, but seemed to consist of a choking sensation rather than difficulty in breathing. October 7th he received 100,000,000, following which there was a severe reaction with recurrent attacks of asthma during the next three days. It was decided to lengthen the interval to five days. His condition then improved until November 6th. However, he continued to have light attacks, which consisted mainly of a sensation of oppression and slight wheezing. In view of this, a new vaccine was prepared from a cast obtained from the sputum and he was given 50,000,000 November 17th, following which he had violent reaction. November 24th he was given 25,000,000 without reaction and with marked improvement in his condition. He continued to improve so rapidly that on December 4th he was discharged and sent home with the vaccine to be treated by his home physician. Decem-

ber 12th we received a note from his doctor which states that he is very much improved.

CASE IX.

D. S. D. Male. Age 21. Student.

Patient appeared April, 1920, complaining of attacks of shortness of breath brought on by colds, exercise and dust. These attacks would come on at night and be so severe that he was obliged to get up, and after a few hours, cough up a large amount of sputum and be relieved.

His tonsils were removed in May, 1920, and the attacks continued as before. In addition to this, in connection with the attacks, there was epigastric pain and eructation of gas. He returned for treatment in February, 1921, and a vaccine was prepared from his sputum and on February 14th he received the initial dose of 50,000,000, following which there was a severe attack of asthma. The two succeeding doses were reduced to 25,000,000 and there was no reaction after the injection. The dose was then increased and he has had no asthma since February.

CASE X.

R. B. S. Male. Age 22. Student.

This patient gives a history of chronic catarrh, pneumonia five years ago, and tonsillectomy one year ago. His present illness began in 1912 with hay fever and asthma in September. This has persisted up until the present time. The present attack began with a cough, which lasted for about a week, after which time he developed asthma, which was so severe that he was unable to sleep.

Vaccine was prepared from the sputum and he received the first treatment of 50,000,000 on October 11th, 1920, and the second on October 16th. He reported partial relief after the first treatment. Following the third treatment on October 23rd, he has had no asthma, and was discharged November 11th, having received seven treatments totaling 1,500,000,000 bacteria.

CASE XI.

G. W. F. Male. Age 62.

Patient's present illness began July 2, 1920, with severe difficulty in breathing, which has persisted ever since and comes in attacks, and is relieved by burning a powder which contains stramonium. He had a chronic cough and raises great quantities of sputum at the conclusion of attacks. The cough is present between attacks and is moderately productive. During the past year he has lost thirty-five pounds. Physical examination reveals signs of pulmonary emphysema, chronic bronchitis and bronchial asthma. He had extensive pyorrhea. X-ray of the chest is characteristic of chronic bronchitis with emphysema.

On October 7th, 1920, his teeth were extracted. A vaccine was prepared from the sputum and on October 12th he received his first dose. He received five injections and has had no asthma since his first treatment, but the cough persisted. He was discharged November 6th, with 100 per cent relief.

In this group the treatment has been completed in five cases. Of these, four show complete relief and the fifth a marked improvement.

TUBERCULOSIS GROUP

CASE XII.

A. H. Male. Age 28. Laborer.

Patient's chief complaint is difficulty in breath-

ing. He has had two attacks of pneumonia and two attacks of pleurisy.

His present illness began in 1918 with difficulty in breathing, especially in the fall, winter and spring, which is severe enough to keep him in bed for a week at a time. He has a cough at times and his difficulty in breathing is especially bad at those times. He has a cough every morning. Physical examination of the chest shows a moderate emphysema with low-pitched musical rales throughout both lungs, heard mainly on expiration. X-ray of the chest demonstrates an early pulmonary tuberculosis.

Tonsils were removed and cultured. Patient received the initial injection November 27th, 1920. He was treated at weekly intervals until March with about 50 per cent improvement, but with considerable reaction to the vaccine, so that it was not possible to give doses above 150,000,000. A new vaccine was prepared from the sputum and he received the initial dose of 50,000,000 on April 2nd. No reaction occurred and the dose was increased to 100,000,000 on the 8th, 150,000,000 on the 16th and on the 23rd he received 200,000,000. The past two weeks there has been no asthma.

CASE XIII.

G. A. Male. Age 53. None.

Patient's chief complaint is difficulty in breathing and palpitation. His father died of pulmonary tuberculosis at the age of 53. His present illness began five years ago with gradually increasing shortness of breath on exertion without relation to the seasons, locality or animal emanation. His shortness of breath and wheezing came in attacks which he had both at night and in the daytime and which were relieved by asthmador. During the past three months he has been very much bothered by palpitation of the heart. The chest reveals characteristic signs of an old pulmonary tuberculosis, chronic emphysema and bronchial asthma. X-ray of the chest reveals a chronic fibroid pulmonary tuberculosis which involves every lobe, the uppers more than the lowers, the right more than the left. The differential blood examination shows four per cent eosinophilia. The diagnosis is chronic pulmonary tuberculosis, asthma, chronic myocarditis, general arteriosclerosis, septic tonsils, pyorrhea alveolaris, cataract and inguinal hernia.

Vaccine was prepared from the sputum.

He received his first treatment October 23rd and his last December 11th, 1920, a total of 1,550,000,000 bacteria. During this time there was a marked improvement in his asthma, but he continued to have minor attacks, although he improved so that he was able to walk six miles for one of his treatments.

In this group there are two cases, one of whom is completely relieved, the other showing about seventy-five per cent relief.

The cases reported are consecutive cases in which treatment has been completed. The number is too small and the time elapsed too short to warrant any conclusions as to the final value of the method.

Of the thirteen cases presented, ten show complete relief. Even if this relief should prove to be only temporary, the treatment is still of great value.

THE PROPHYLAXIS AND TREATMENT OF ANAL INCONTINENCE FOLLOWING OPERATIONS FOR FISTULA.*

LOUIS J. HIRSCHMAN, M. D., F. A. C. S.
DETROIT, MICH.

One of the sad sequelae in the past, and to a lessened degree at the present time, of operations for the relief of ano-rectal fistula has been the affliction of loss of fecal control. Patients, after a destructive operation for the relief of fistula, will find to their dismay that they have lost the power to control the passage of gas, mucus, and feces to become at once a nuisance to themselves and to those with whom they come in contact.

As soon as the patient awakens to a true realization of his condition and finds that he involuntarily becomes an unwelcome nuisance to those around him, he becomes a recluse and voluntarily ostracizes himself from the society of others.

It is bad enough for a man to be compelled to resign himself to seclusion and condemned to a life of odoriferous discomfort. The constant wearing of bandages and dressings in an endeavor to keep himself clean and insure a small degree of comfort is bad, but how much worse it must be for one of the gentler sex to drag out her life in a similar condition.

While it is true that certain serious diseased conditions attack and destroy the sphincter muscles so that incontinence is in a very few cases unavoidable, the greater number of such cases are preventable and their existence in the present day and age is a sad reproach to the surgical handling of ano-rectal fistula.

There are certain cardinal principles to be followed in all operations for the relief of ano-rectal fistula, and if these are studied, mastered and conscientiously followed, this demoralizing, disgusting, disgraceful and condemnino- sequela will soon disappear from the list of surgical crimes.

As in all branches of our professional endeavor, the greatest service we can render a patient is the prevention, rather than the cure, of any diseased condition. This holds particularly true regarding fecal incontinence. When the patient, afflicted with a fistula, presents himself for treatment he must be studied just as carefully as if he were suffering from some obscure symp-

*Read before Section on Surgery, M. S. M. S., 56th Annual Meeting, Bay City, May, 1921.

toms of internal origin. The fact that, on external inspection of the parts, one or more openings are disclosed from which a discharge is exuding may be regarded as *prima facie* evidence of the presence of a fistula.

The type, extent, direction, character,

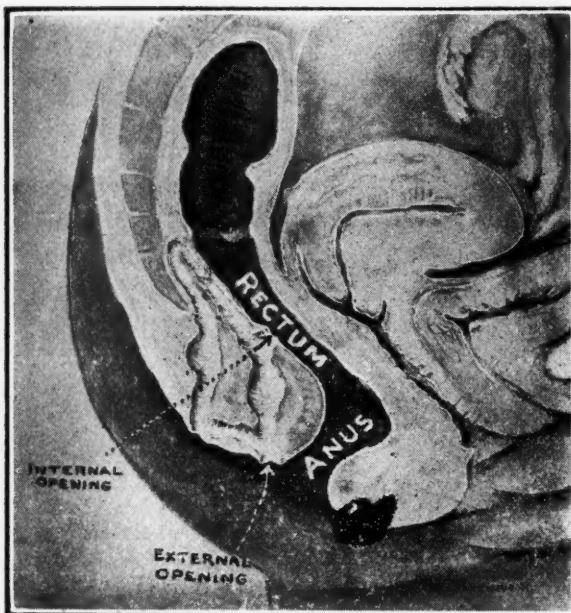


Fig 1

complications and source of the fistula are all extremely important facts which must be elicited before treatment is decided upon. A stiff probe should never be used in the diagnosis of fistula. If any probe be used at all, it must be made of soft annealed silver suture wire, which is so pliable as to adapt itself to the curves and tortuosities of a fistulous tract, and never of firm enough consistency to force a false passage.

One of the most vicious teachings in the past was the advice offered in several recognized textbooks on general surgery—that of passing the probe or grooved director into the external opening of a fistula, and to force it through into the rectum if an internal opening could not be discovered. In other words it meant either causing a new and additional traumatic internal opening to complicate an already existing complete fistula, or it meant the conversion of an external sinus into a complete fistula.

The best method to definitely determine the number and directions of fistulous tracts, as well as other anatomical relations is by the injection of bismuth paste and the employment of stereoscopic radiography. Much information is also disclosed by digital, recto-vaginal and bi-manual palpation.

Frequently the location of the internal openings can be well determined by observing through an anoscope while injecting heated bismuth paste through the external opening. The bright yellow bismuth paste shows in sharp contrast against the normal or inflamed mucous membrane or skin. A soft annealed silver wire probe is passed into the external opening, and with great gentleness, directed through the fistulous tract guided by a finger in the rectum until it emerges through the internal opening. The bismuth paste lubricates the entire fistulous tract and assists in no small degree in the passage of the probe.

If one is dealing with a single-complete tract, the internal end of the flexible probe should be drawn outside of the anal canal, and twisted around its external extremity. The probe then acts as a tractor, which facilitates the excision of the whole fistulous tract.

Whether local or general anesthesia is employed, an incision is made through the skin and down to the indurated tissues surrounding the fistulous tract. The incisions are carried on either side of the tract and rejoined beneath or behind it. The entire tract, threaded on the silver wire, is then cut away.

Other successive tracts are treated in like manner, provided they do not extend be-

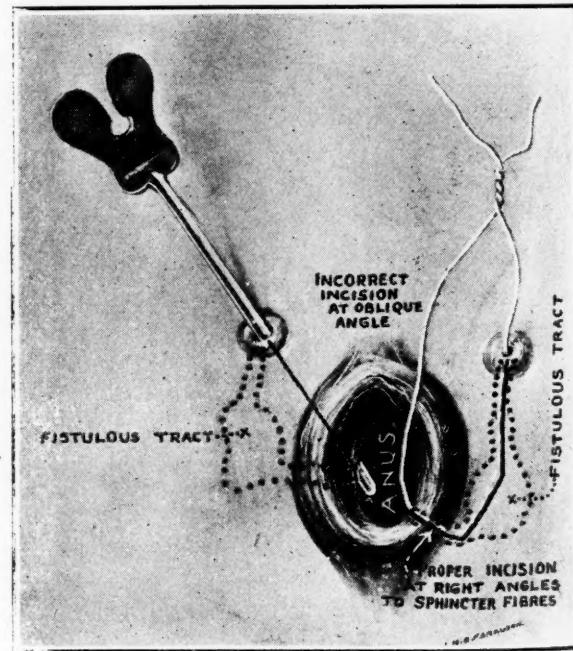


Fig 2

neath, behind or beyond the external sphincter muscle. All incisions are directed so that they cross the sphincter fibres at

right angles. This is extremely important in the prevention of incontinence.

If more than one tract would seem to indicate cutting the sphincter more than once at a single sitting, this can be avoided. The tracts in a multiple fistula, which are not to be incised or excised are each injected with bismuth paste. A soft silver wire probe is passed through each to the internal opening and the ends twisted together as outlined above. These are allowed to remain in position until the healing of the first, or original tract, is complete. They are tightened every two or three days just sufficiently to take up slack but not to constrict the tissues. The fistulous tracts, which were incised in back of and down to these wires, will heal up to the wire, thus providing a solid backing—a cicatricial splint to the sphincter muscles.

We now have to deal with two or three superficial fistulas, which are threaded on silver loops. These are incised and the loops freed under local anesthesia and healing is completed in a few days. Silk thread, silkworm or steel snare wire may be used in the place of silver. If the snare wire is

open, the temptation in the past has been to pack the cavity with iodoform gauze, and at each succeeding dressing to repack. More cases of anal incontinence following operations for fistula are due to this pernicious, persistent packing than any other one factor.

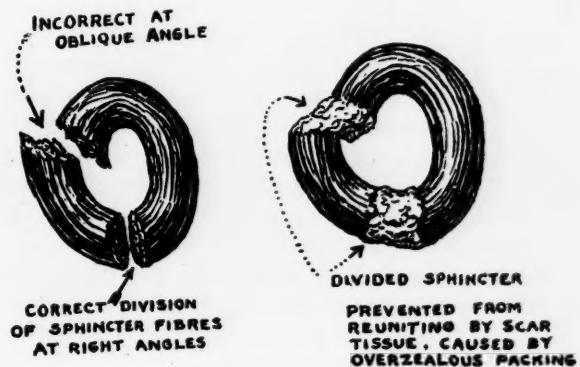


Fig 4

The packing prevents the severed ends of the sphincter muscles from reuniting, and in the healing process allows the space to fill in with a large area of scar tissue to replace the sphincter. The ends of the sphincter being separated by a bridge of connective tissue, this muscle is not able to functionate properly. The arc of sphincteric circumference, which is filled by non-elastic tissue, prevents proper closure, and leakage of gas, mucus and feces results.

It is perfectly proper at the time of operation, in order to prevent unnecessary blood loss from oozing, to pack the wound. This packing should be removed however at the end of twenty-four (24) hours. At each succeeding dressing a strip of gauze is loosely inserted into the wound for drainage, but it is never again repacked.

Great care must be exercised in the after-treatment of these cases to guard against the integument growing down into the wound and forming a cleft, or sulcus, which of course produces incontinence. If some parts of the wound are sluggish and granulations tardy in healing, stimulating applications are indicated. One of the best preparations for this purpose is Scarlet Red Ointment, not stronger than five per cent.

When the wound is healed, it will be found that the severed ends of the sphincter have been cemented together by a thin film of connective tissue, and perfect contour and complete continence is again restored.

The keynote in the treatment of ano-rectal fistula is the personal attention of the surgeon to after-care. More patients have been injured from operations for the relief of fistula by negligence, carelessness and lack

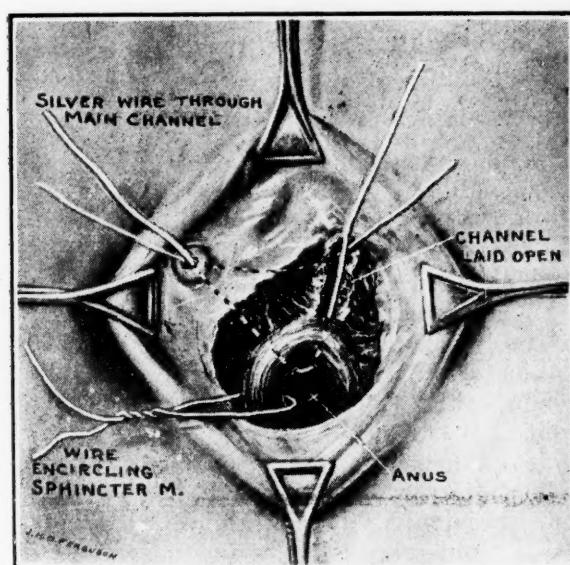


Fig 3

used, the operation may be completed by sawing through the tissues with the wire instead of incising.

Most fistulas are not of the simple textbook "goosequill type," but consist of an irregular shaped abscess cavity surrounded by a wall of scar tissue, and communicating with integument and bowel by means of small channels. The use of bismuth paste and stereoscopic X-Rays give us all of this information, however, before operating.

When a fistulous tract of this type is laid

of interest by the attending surgeon than by improperly performed operations.

When the patient presents himself with a history of an operation for fistula followed by incontinence, a serious problem confronts the surgeon. On account of the unfortunate result of the previous operation, the patient is prejudiced against any kind of surgical procedure in the affected region of the body, and has become despondent, morose, pessimistic and generally antagonistic. Fortunately, however, his deplorable condition is such that he is willing to try anything under the sun in order to get even partial relief.

Quite a number of patients have given up hope and have resigned themselves to their fate. In fact it has been surprising to the author to learn that many patients have been informed by their physicians that their condition was hopeless and nothing could be done for them.

As a matter of fact four out of five cases can be not only relieved, but permanent function can again be restored. If two-thirds of the sphincter muscle can be demonstrated to be intact, continence can be restored by surgical measures.

A large variety of plastic operations have been devised for the reunion of the severed sphincter; in fact each case is a law unto itself. Any operation to restore sphincteric continence must include:

1. The preservation of uninjured sphincter muscle sufficient for future function.
2. The careful removal by dissection of all scar tissue.
3. The co-apportion of healthy sphincteric muscle without undue strain or tension.
4. The prevention of post-operative infection and promotion of healing by first intention.

Whether one employs local or general anesthesia depends to a large degree on the amount of scar tissue present. If the amount is slight, not involving more than 10% of the sphincteric circumference, local anesthesia may be employed with satisfaction. If, however, there is more scar tissue to be dissected, it is better to have the patient under general anesthesia.

If there are two distinct areas where sphincteric muscle has been replaced by scar tissue, better results will be obtained if the operation is done in two stages. The technique of the repair of the severed sphincter is as follows:

Incisions are made as near the outer limits of the scar tissue as can be determined, and at right angles to the sphincteric circumference, or as near parallel to the

radiating cutaneous folds as possible. These incisions are brought down to a point below the scar-mass and are brought together so that a wedge-shaped cavity is left. Care must be taken to preserve as much mucous membrane and skin as possible so that a good covering will remain after the sphincter is repaired. The sphincter ends can be easily dissected free from surrounding tissues, and should be brought together by interrupted number two chromic sutures. Two or three sutures are sufficient. The skin and mucous membrane is sutured over this with interrupted chromic or silkworm stitches, and the wound covered with stearate of zinc powder.

If the incontinence has resulted from an anterior fistula in a female patient, and there is some perineal involvement, it may be necessary to perform a complete perineorrhaphy as well.

Care must be taken to keep the bowels at rest for at least three days and then to move them by an enema rather than by drastic cathartics. The administration of mineral oil every night will assist in preventing hard irritating stools. The same local care is given following this operation as following perincorrhaphy. After the sixth day the patient may be allowed to have unassisted stools. Usually in ten days he is able to walk.

If a two-stage operation is to be performed, it is well to wait three or four weeks after the first wound is completely healed before performing the second operation. We have a number of these cases come to us for treatment every year, and in almost every instance we have been able to restore sphincteric continence. In a few cases where the destruction of the sphincter muscle was quite extensive, the patient has good continence for formed stools, but when diarrhoea is present, there will be more difficulty in restraining movements for several months following operation. If the diet is supervised so that the patient has solid stools, this difficulty can be, to a large extent, avoided even in these extreme cases.

In patients, who have suffered great destruction of tissue due to trauma, infection or malignant disease, one will occasionally find that the entire sphincter muscle has been destroyed. Torsion of the rectum to ninety degrees with suture in the twisted condition will sometimes act satisfactorily if the patient's stools are kept solid.

When complete destruction of the sphincter, and with it more or less of the rectum itself has occurred, the best substitute we

can offer is a colostomy, which can be well controlled by the patient. By interlacing the bowel between bundles of rectus fibres, we can provide a fairly satisfactory sphincter, and the artificial anus is located on the anterior abdominal wall where the patient can give it the proper toilet. It is interesting to note how well the artificial anus can be controlled, and regularity of stools established. We have a number of patients, who have a daily evacuation at a regular hour in the morning and are free from annoyance until the following day.

The patient washes out the afferent opening of the colostomy with a four ounce all-rubber bulb syringe. A two per cent solution of sodium bicarbonate not only cleanses the bowel of fecal matter but removes excessive mucus as well. He first injects three or four syringes full of the solution, while in the recumbent position. After lying there for two or three minutes, he sits on the toilet and placing a crescent basin below the colostomy opening, he strains the same as at the stool. This will empty the sigmoid and as a rule the patient is relieved until evening or until the following morning.

As was stated in the fore part of the paper, most of these cases of incontinence are preventable. It behoves us, therefore, when operating for any ano-rectal condition and particularly abscesses and fistulas, to respect the sphincter muscle in our incisions, and by no means to insult it in our after-care by over-zealous packing.

10TH FLOOR KRESGE BLDG.

TONOTOMY OF THE INFERIOR OBLIQUE MUSCLE.*

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DETROIT, MICH.

History of case. A school boy aged 14 years entered the Ophthalmic Clinic of the University of Michigan, complaining of blurred distant vision, and double sight which was troublesome only when wearing glasses.

The family history was negative and the patient suffered no serious illness, except an attack of acute appendicitis five years previously for which an appendectomy had been performed.

Examination. It was noted that the patient tilted his head forward and turned it slightly to the left. Vision, right eye 2-60, left eye 3-60. On turning the eyes to the right there was no apparent deviation from the normal, but on looking straight ahead there was at times a manifest vertical deviation of the right eye. This hypertropia was markedly increased on looking to the left.

The physical examination, including a blood

Wassermann, was negative.

Refraction under homatropine gave the following result:

O. D. S-5.50 C-0.75, axis 100°, vision—6-6
O. S. S-5.00 C-0.50, " 105°, " 6-6

Examination of the fundus was negative, except for early and very moderate myopic changes.

With the troptometer, the ocular excursions were as follows:

	Up	Down	Right	Left
O. D.	45	50	40	50
O. S.	40	55	45	50

The field of diplopia was somewhat variable, but generally was characteristic of paralysis of the left superior rectus; the vertical distance between the image increasing as the eyes were elevated and turned to the left. Tortion was excessive. On looking straight ahead the false image was that of the left eye, but on attempting to look up, or to the left, the patient fixed with the left eye—the right eye shot up and the false image was that of the right eye.

Repeated examinations over a period of two months showed a right hyperphoria of from 21° to 32° and an exophoria of from 3° to 5°. The vertical deviation always increased on looking to the left and disappeared on looking to the right.

Diagnosis. Spasm of the right inferior oblique with partial loss of power in the left superior rectus.

Operation. Tonotomy of the right inferior oblique at its origin. Convalescence was uneventful and when the patient left the hospital, there was no diplopia and no hyperphoria or exophoria could be demonstrated. Now, three months after operation he has 3° of right hyperphoria, 1° of exophoria, no diplopia. He holds his head erect, and expresses a great sense of relief.

Largely through the publications of Dr. Duane and Dr. Posey, cases of deviation of the eye due to spasm of the inferior oblique are becoming better understood and more generally recognized.

According to Duane, the indications for tenotomy of the inferior oblique are, first, paralysis of the superior rectus, congenital or traumatic, with fixation with the paretic eye and consequent secondary deviation of the inferior oblique in the opposite eye; second, paralysis of the superior oblique with secondary deviation of the inferior oblique in the same eye. The former condition is rather frequent as a congenital anomaly. The picture is characteristic, so that the diagnosis can be made in some cases even at the age of a few months. To evade diplopia, the patient either shuts one eye or turns the head to the right and tilts it. In looking to the right, and especially upward, to the right, characteristic diplopia develops.

Head tilting is frequent in cases of congenital deviation of this character. It is due, according to Duane, to the involuntary attempt to get the double image on a level and thereby obviate the confusing effect of a

*Read before the Section of Ophthalmology and Oto-Laryngology, M. S. M. S., 57th Annual Meeting, Bay City, May, 1921.

vertical diplopia. This head tilting may be so extreme that it may simulate a torticollis. The vertical deviation may be associated with a divergence or convergence of the eyes, the lateral deviation being developed in an effort to suppress the false image by forcing it out of the useful field. In cases I have seen, the deviation is most often up and in on looking toward the paralysed muscle, although, occasionally it goes up and out. The eyes may show little or no deviation from the normal on looking straight ahead, or away from the side with the affected muscle, the abnormal deviation being present only when looking toward the side affected.

There is present when the patient fixes with the affected eye, a secondary deviation of the associated muscle. In the case of paralysis of the superior rectus in one eye, the inferior oblique of the opposite eye is over stimulated. To relieve this condition, the inferior oblique is divided at its origin. The operation may be performed by approaching the muscle through the conjunctiva, or through the lower lid, just above the orbital margin.

OPERATION.

As suggested by Terrein, the incision is made through the lid beginning at the intersection of the lower orbital margin, with a perpendicular dropped from the superorbital notch, and extended inward. It should be carried down to and through the orbital septum, immediately above the orbital margin. The tendon lies close to the floor of the orbit and well to the inside. In searching for the tendon, the hook should enter near the outer end of the incision and be swept inward with its point turned inward and upward. The tendon is buried in the orbital fat which will present in the wound when the tendon is delivered. A free division of the tendon should be made near its origin.

The results are most gratifying in the successful cases. The torticollis is relieved at once and the patients express themselves as experiencing the greatest sense of relief.

The operation may be performed as early as the age of four. The vertical error should be corrected first. As this may be the cause of the lateral error, no further operative interference may be necessary. Should the lateral error persist however, it may be corrected later.

I have recently had such a case. The vertical error was corrected by dividing the

inferior oblique at its origin, but it was necessary to divide the tendon of the internus to correct the convergence.

THE SEQUELAE OF EPIDEMIC ENCEPHALITIS.

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It is customary to look upon epidemic encephalitis as an acute infection running a self limiting course and with a mortality rate, varying in different localities, from 20% to 50%. It was also generally assumed, at least until quite recently, that those who did not die recovered with no permanent disability. This latter assumption is one which, on the basis of my own experience as well as a study of the literature, I believe to be incorrect. I have been so situated as to see a considerable number of these cases (22) during the first ten days of their illness but a much larger number of cases in which there was a clear history of this disease and in which certain symptoms were persistent or in which other symptoms have developed as sequelae. I am still seeing such cases frequently.

The problem of their recognition is, in most cases, not at all difficult when the history is clear and the possibility of their occurrence is recognized; however either or both of these points may be obscure. For instance, it is certain that many cases of epidemic encephalitis occurred which passed unrecognized either because they were mild, ambulant cases or because they were of the more unusual types. Also the fact that some of the sequelae appear some time after the patient has apparently recovered from the original symptoms and, seemingly, are entirely different in character from them is another factor which might cause difficulty.

The great variety of the symptoms which may occur under such conditions makes a condensed description of them a difficult matter.

Perhaps the most frequent is some disturbance of sleep. More often it takes the form of insomnia or else a reversal of the sleep habit, insomnia at night—sleepiness by day. This post-encephalitic insomnia is common. Grossman (Arch. of Neur. and Psych. 5,580) found that 49 out of 89 of his patients showed it and Rosanenda has written a monograph on the subject. It may last for a year or more.

Another common complaint is impaired memory and inability to concentrate. This

is usually not a serious symptom except in those whose occupation requires these faculties to high degree.

Peculiar neurotic symptoms resembling those of the psycho-neuroses; hysteria or psychastenia, are not uncommon. In fact the symptoms are so similar that the diagnosis of one of these conditions would be made if it were not for the history and the fact that the emotional upset is obviously not psychogenic. They do not receive benefit from psychotherapy as does the ordinary psychoneurotic altho they are often extremely suggestible.

A marked change in the general mental characteristics of the patient is not infrequent, especially when the disease occurs in children. The clean, obedient, quiet child becomes noisy, restless, disobedient and subject to bad habits formerly unknown. As to the permanency of these phenomena following epidemic encephalitis I can not say, but inasmuch as similar results sometimes follow encephalitis in childhood when due to other causes, measles, etc. I think that they might be of long duration.

In some cases there is a progressive mental deterioration following these cases which resembles the clinical picture of paresis and when coupled with the mask like facial expression and the tremor about the lips, etc., which may persist from the encephalitis the resemblance is striking.

Kirby and Davis (A. of N. & P. 5), Jones and others have written extensively on the psychiatric aspects of encephalitis drawing the general conclusion that no special type of psychosis exists but that the disease may develop psychotic trends pre-existent in the individual. It may be pointed out however that it is doubtful if the patient would have developed any frank mental disturbance if they had not had the disease and, in view of the great frequency of character change following the disease, psychoses, of various types, might well be included among the sequelae of encephalitis.

Disturbance of the function of accommodation is frequently noted in encephalitis along with ocular palsies of various kinds. They usually clear up quickly but in several cases that I have studied a condition of weakness in accommodation—transitory loss of the power of accommodation after use of the eyes for near work, has been a persistent symptom.

The paralyses, when they occur in the face, etc., are usually transitory but the myotonia, the mask like facial expression and the general rigidity of the pseudo-Parkinson syndrome are persistent. I have

seen several cases of this kind of over a years duration and they as yet have not improved in this respect.

The myoclonic movements which are characteristic of one type of the disease are not usually permanent but in two adult patients with movements of choreic type neither had improved in this respect after eighteen months observation. From my experience and a review of the literature it would seem that this choreiform type offers a bad prognosis for recovery.

Although the paralytic phenomena such as hemiplegia and paraplegia, when they occur, are usually transitory yet they may persist for many months and muscular atrophy may occur. I have seen two cases in which the signs and symptoms of anvotrophic lateral sclerosis developed rapidly after an attack of epidemic encephalitis and a number of similar cases are recorded in the literature. Gutman and Kudelski report a case of myopathy of the Laudouzy-Dejerine type following encephalitis.

The chronic and recurrent types of cases of epidemic encephalitis are not uncommon. Economo, in 1919, reported a case in which the disease began in 1917. The patient died in July 1919 and autopsy showed typical lesions. De Massary and Boulin reported a similar case fatal in nine months. The presence of these chronic cases may account for certain errors in diagnosis especially when the symptoms—pains, paralysis or mental symptoms—are such as may be found in other diseases.

Personally, I do not believe that epidemic encephalitis is contagious at any stage of the disease, nevertheless there are instances reported as examples of contagion from these chronic or recurrent cases. Claude and Laulerie* report such an instance from an old case with pseudo-Parkinson syndrome. His symptoms began in February, 1919. The second patient was exposed to the first in December 1920 and developed the disease. Netter reported a case in a patient whose only known exposure was to a patient who had had the disease two years before and who had been presumably cured but had occasional attacks of diplopia. When one stops to consider all the possibilities in such cases and the large number of people who must have come in contact with them without developing any disease, it seems more reasonable to consider them as mere coincidence.

The treatment of the persistent symptoms and sequelae is determined to a con-

*Bull. Soc. Med. de Hop. Paris Jan. 21, 1921.

siderable extent by their character and severity. The insomnia may be relieved by some hypnotic given regularly until a proper sleep habit is re-established. For brain workers, a prolonged rest is usually very desirable. The persistent pains are generally best relieved by salicylates or aspirin. I have never found it necessary to use morphine altho many of these patients had been given morphine before I saw them, usually with bad effect.

The chorea and myotonic cases are resistant to treatment. The injection of foreign protein may be of some use. For this purpose, milk seems to be as useful as anything. In fact we have had better results with milk injections than with vaccines, etc., altho variations in individual cases make comparisons difficult.

THE WOMAN IN LABOR*

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The propagation of species among vertebrate animals includes a variety of processes which culminate in parturition. Among viviparous animals, including man, this latter act involves vicissitudes which increase in number and severity, more or less in ratio to the evolution of the demands of civilization; labor among primitive peoples being, as a rule, more like that of the lower animals, and less strenuous than with the higher cultural group.

Tradition, associating pain with labor, the assumed penalty for disobedience—can be traced back to Babylonian-Assyrian nature myths, and indicates that childbirth has always been recognized as an epochal event in the life of woman, and no opportunity since the beginning of historical notation has been lost in calling attention to and emphasizing the fact. Phenomenal as it appears, there is a peculiar lack of sympathy between women at this particular time. At the most critical period of her existence, when words of comfort, cheer and encouragement are her due, the enciente is too often harassed by tales of suffering, misadventure and fatality, so that she lives, mentally at least, in the "shadow of the valley" during gestation and enters labor protesting, retracing, frightened, often panic-stricken and demoralized. The dread of delivery and its attendant possibilities and the fear of physical suffering are the two deterrents responsible for the refusal of a large number

or women to assume the obligations of motherhood.

If, as has been asserted, labor in modern woman has become almost a pathological process; if, as advocated, operative measures are to surplant normal delivery; if the material instinct is really approaching a vestigial remnant and woman is to be merely employed as a hatchery to be delivered by artificial means—then one of the three grand divisions of medicine must be abandoned and obstetrics relegated to the scrap heap of oblivion. Fortunately for the human race there are still enough adherents to a belief in physiological processes to stem the tide of this purely mechanical pseudoscience. Whatever labor may present in itself, the advantage of the woman still lies in the knowledge of her acquired by the accoucheur during the months of pregnancy, and the advice and encouragement which are within his power to extend.

Prenatal care is a forewarning, and should be a forearming of the physician. He learns to know his patient; her build, her psychology, and, to an extent, her capacity for pain during the test of labor, and thus is in position at a comparatively early period in pregnancy to elect the outcome of the future delivery. Pelvimetry, the determining of vaginal capacity, of vital forces, anatomical structure, nervous response, blood pressure, and chemistry, and urinalysis, further add to his knowledge of the patient's capability and by what disorders she may be threatened, and he, indeed, is negligent, who does not avail himself of this pre-information to as large an extent as possible, and thus forfend from needless suffering if not ultimate disaster. Nor is the knowledge of the mother thus obtained of single importance, for observations of the child in utero, its development, the size of head, the presentation, position, and activity, all have bearing on the approaching labor, and the future existence of the offspring. Of late particular attention has been given to the influence of specific infection—its relation to abortion and prematurity, as well as to the immediate and remote welfare of the child.

Women leading normal lives, undoubtedly go through labor with comparatively little suffering or trouble, although the time required for the passage of the child through the parturient tract has possibly been prolonged. Pain or suffering, will depend largely on the woman's nervous and psychic make up; susceptibility to these increasing with the reaction to nervous irritation, and impressionability.

*Read before Section on Gynecology and Obstetrics, M. S. M. S., 57th Annual Meeting, Bay City, May, 1921.

It is the duty of the obstetrician to allay or overcome unnatural conditions and to bring his patient through the trying ordeal with as little damage to physical and mental organization as possible.

The first stage of labor is the test. From the onset increasing pain erects a state of uneasy expectancy, which becomes discouragement through prolonged continuance. In her ignorance of the mechanism of labor, the parturient seems to suffer without recompense, to pain without effect; depression follows and with the unstable and hysterical, a mild frenzy may develop. During the close of this period the physician himself is not without perturbation; he sees the patient suffer, but orthodoxy prevents possible amelioration. He is told that anodynes may lessen or even stop uterine contractions and, while relieving pain, prolong labor. Following too closely the letter, he forgets that rest is the promoter of activity, and that fatigue results in exhaustion and later perniciousness. However bravely a woman may withstand the ordeal there comes a time when the stoutest may break under the continued strain, and it is just here that analgesia plays an important role. Anesthetic may be given with most gratifying results, at the height of the pain, and in instances of stormy contractions, pushed to unconsciousness, a short sleep promoting an awakening of refreshment and renewed endeavor. My own practice is to anticipate the anesthetic with ten grains of chloral hydrate by rectum, preceded by a hypodermic of an ampule of Pantopon, but morphine (Gr. $\frac{1}{4}$) may be given with equal result. This is not new; most physicians are familiar with the method; I find, however, that it is not usually practiced.

If the first stage has been properly managed, the patient enters the second in good physical and mental condition, but the severe pains call out protest as to endurance, and in the interest of a healthy puerperium, the patient should not be permitted too great suffering. Here some form of analgesic is most desirable, and the burning question of late seems to be which shall be selected, chloroform, ether or gas. Each of these may be used successfully, and each has its particular merits. Chloroform quickly relieves the pain and, if given properly, is devoid of danger, and leaves no unpleasant after effects. Half an ounce of this anesthetic will usually suffice for the ordinary case, and two drams is all that is often required. It has the advantage over other anesthetics in the small amount which the practitioner need carry to his case, the readiness with

which it may be procured, and its safety under proper conditions for administration. Ether has the same analgesic qualities as chloroform, but its disadvantages are many. It is generally less acceptable to the patient; it must be given in larger amounts to produce the desired results, it not infrequently gives rise to nausea and sometimes vomiting—it is bulkier to transport, and, in the country, it is less readily procured. It is, however, considered "safe," by both the profession and the laity. During the past few years nitrous-oxide gas has been warmly advocated by its partisans, but, after considerable experience, I conclude it the least desirable of the three analgesics. The apparatus for its administration is costly and heavy, although unquestionably making a profound mental impression on the patient; it is difficult to obtain or have on hand in constant supply, especially in country practice, and it demands, for its administration, the presence of an experienced anesthetist. The self administration of gas by patients is most unsatisfactory.

In hospital practice the employment of nitrous-oxide gas, and oxygen is followed by excellent results in most cases, but it may not be considered absolutely free from danger. In an experience of many years covering many deliveries under chloroform and ether, no immediate or remote disasters have occurred, nor have I been requested to employ some other anesthetic at a subsequent labor, as has happened in the instance of gas. In his selection of the anesthetic the practitioner must be guided by experience and his own judgment rather than by laboratory experiments or statistical tables which have little or no bearing on the case. What should be urged and emphasized, however, is that the woman in labor is entitled to human treatment even in the accomplishment of a physiological process, and to this end some form of analgesic which will produce results, without injury to mother or child, must be administered. He surely is open to criticism, who will permit his patient to unduly suffer without attempting relief, or precipitate a possibly complicated puerperium through an exhausting and unassuaged deliver.

62 ADAMS AVENUE, WEST.

HEMOPHILIA.

G. C. STEWART, M. D.
HANCOCK, MICH.

Hemophilia or hemorrhagic diathesis is a condition characterized by an inherited tendency toward inordinate spontaneous

traumatic hemorrhages. The disorder is attributable to a congenital deficiency in hematopexis.

Injuries of a trivial nature may induce an uncontrollable loss of blood which may prove fatal. The loss of blood is not confined to surface injuries alone, but may follow the bruising of a joint producing a hemo-arthritis while serious hematomas are prone to force subcutaneously and in the muscle sheaths.

The physiological changes which would cause a vessel to continue bleeding after the formation of a clot are not fully understood. It has been determined that the coagulation time of the blood is delayed from the normal time of three minutes to thirty to sixty minutes.

Howell has attributed the imperfect clotting of the blood to a reduction of the blood's prothrombin content consequent to some functional changes in the plaques from which this substance is derived.

Recent studies of Hirwitz and Lucas, who found great fluctuations in the prothrombin of hemophiliac plasma directly in contrast to the older theory of Sahl, that a deficiency of thrombokinase, thrombovzn and calcium was the factor of the imperfect hematopexis. Two types of hemophilia are described. First—Familial which is hereditary; transmitted by women, occurring chiefly in males, which occurs from earliest infancy. Victims usually die from hemorrhage in early adult life. The blood is thought to contain an anti-coagulative body. Second type—The isolated or sporadic is an attenuated form accidental without hereditary predisposition. The blood has no coagulative ferment.

P. E. Weil regarded the mechanism of hemophilia as being due in the sporadic cases to an insufficiency of plasmase secreted by the leucocytes, while in the hereditary form there was a sufficiency of plasma but the presence of anti-coagulants.

Labbe insists that there exists a friability and loss of function of the vessel-wall, some chemical process which prevents coagulation.

Certain differences between hemophilia and purpura must be recalled to differentiate them. Hess' studies of the blood show that in the hemophiliac subcutaneous puncture of the skin is rarely followed by an area of hemorrhagic extravasation, while in purpura it is fairly constant.

In hemophilia the application of a tourniquet to the upper arm produces no objective sign but in purpura this causes petechial hemorrhages upon the forearm below the

constriction. In hemophilia great delay in hematopexis and no striking diminution of the plaque count are the rule in contrast to the slightly prolonged coagulation time and sub-normal number of blood plaques in purpura.

General disturbances occur chiefly in the form of cardiac murmurs. The pulse may rise to 120 to 140 a minute. It is usually small and weak. Patients are restless, excited and nervous; complain of weakness and a sense of oppression across the chest. Nausea and anorexia are common, sometimes there is severe vomiting. The amount of urine may be diminished and haematuria is common. Edema of the face and ankles is often noted. The temperature is frequently elevated, especially in joint affections which occur with such frequency that some authors include in their definition of the condition—joint swelling and affection with hereditary tendency to uncontrollable hemorrhage.

Stempel asserts that all the different joint affections from the slightest arthralgia to the severest hemo-arthritis are due to hemorrhage from the synovial membrane into the joint cavity.

Konig's classification of the hemophiliac joints into three stages is usually followed: First—Hemo-arthritis, the stage of hemorrhage. Second—Inflammatory, closely resembles hydrops tuberculosis fibrinosus. Third—Contraction, scar formation and ankylosis.

HEMO-ARTHRITIS.

First—Hemorrhage into the joint may take place rapidly from the slightest injury or may occur spontaneously. A position of slight flexion or extension may be assumed but if the blood is absorbed quickly the affection will not pass into the second stage and the function of the joint may not be disturbed. If the blood is resorbed the swelling of the joint remains and the disease enters the second stage. The over-lying skin becomes red and hot. The swollen joint is spindle shaped, resembling a tuberculous-arthritis. The fluid in the joint consists of serum ad-mixed with blood. The synovia are swollen and of a brownish color. The cartilage loses its white color and is stained brown. It is softened and its surface eroded. It has been demonstrated by the X-Ray that an atrophy of the bone occurs, but the thickening of the bone which has been described is only apparent. In the third stage the cartilage becomes more eroded and bands of connective tissue unite the oppos-

ing surfaces of the joints practically or completely. The capsule becomes contracted and joint cavity may be entirely obliterated. Pain in the joint bears no direct relation to the degree of swelling. The temperature may be 101 to 103 degrees. Neuralgia and neuritis are common in hemophiliac patients due to pressure on the nerves by the blood.

Treatment may be described as general and local. First—Diet is scarcely of importance although the patient should avoid substances that raises arterial tension as alcohol, tea and spices. Milk is to be recommended on account of its calcium content.

Medicinal Treatment. The agents used as general haemostatics act in two ways. (1) Coagulants of the blood and (2) constrictors of the vessels.

First—The coagulants of the blood use the absorptive power of colloids of the blood to modify their molecular state and obtain direct coagulation.

Two classes, first mineral ions, viz calcium chloride, sodium sulphate, iron perchloride, saline solution and artificial sera; (2) substances which form complex insoluble colloids, viz gelatin, serum, organic extracts and peptone. The calcium salts are used internally or locally or as an irrigation. However authorities agree that calcium does not cure hemophilia. The results are inconstant and temporary, of the substances which form complex, insoluble colloids, gelatin has been used extensively. First—Locally over wound. Second—By mouth, 200 C. C. a day. Third—Intravenous which seems to give the best results (but not a permanent one). Serum therapy seems to have given the best, most permanent results. Its objects are preventive, curative, and stimulating to the marrow.

Weil has probably done the best work in this form of treatment.

The serum one uses must be fresh, that is, less than two weeks old. Human serum or that from the horse or rabbit is best. Anti-diphtheritic serum can be used but beef serum is considered bad as it produces fever, etc. Anaphylaxis must be watched for.

The intravenous is the best method of administration. Ten to twenty cc are injected and repeated in four weeks.

Leary treated twenty cases most successfully with toxic symptoms (urticaria) in only one case.

The local application of serum by plugging, by compress aids in arrest of hemorrhage.

Transfusion is chiefly of use for post hemorrhagic anaemias. The result has been

general improvement rather than a permanent cure in hemophilia. The necessity for proper agglutination and hemolysis tests and also a Wasserman make it an extremely slow procedure. Organic extracts of thyroid, ovary and liver have been used and their action is merely transient. Peptone has been used with moderate success given intravenously, subcutaneously and per rectum.

Under Vasoconstrictors, Ergot may aid other coagulants but by itself it is considered useless.

Adrenalin used locally and sometimes injected should be used with great care, especially contra indicated in chronic nephritis and aortic disease.

Local treatment of wounds is best done by application of serum or organic extracts.

Powdered extracts have been used successfully.

Following is a family and personal history of a case which I have had under treatment during the past year for two attacks of hemo-arthrosis of the left knee and ankle.

HISTORY OF BLEEDERS IN THE FAMILY OF NAPOLEON MARTIN

The following is a history of the family of Napoleon Martin, in which are found traces of hemophilia:

FAMILY HISTORY.

Beyond the immediate family none of the relatives on either side were troubled with bleeding, all being rugged Canadian farmers, who lived well into the nineties.

The father, Napoleon Martin, states that when quite young, he and his brothers used to have profuse nosebleeds, but none ever suffered any ill effects from same and as they became older they gradually became less frequent until they ceased entirely.

There were eleven children in the family, four girls and seven boys but all but one boy died before reaching the age of twelve. In fact all died in infancy with the exception of three boys and two girls; the girls dying of disease while one boy died as the result of biting his tongue. The wound was very small but he died after one week of continuous bleeding. The other boy had a hemorrhage of the stomach although he was not known to have injured himself in any way.

CLINICAL HISTORY.

The remaining boy, who is the only survivor of the children, has had several very close calls because of his hemophiliac tendencies.

Age 8—Extraction of tooth. Bled two weeks.

Stopped with dental gum.

Age 10—Vaccination. Scab cut in some way.

Bled about four days. Hardly remember how stopped.

Age 12—Extraction of tooth. Bled about one and one-half weeks. Stopped with wad of cotton and tea leaves.

Age 14—Injured in head (coal). Bled

twenty-four hours. Stopped by plugging up hole after which an infection set in.
Age 23—Removal of Tumor or Cyst. Bled about six days. Stopped by causing infection (local) to set in.

In most of these the flow of blood was stopped only after I had become very weak and my pulse very light. The bleeding in all cases was not a steady flow but a never ceasing ooze.

I might add that when a small boy I was troubled with nose bleeds of the most malignant character. My nose bled without provocation and at times caused much worry.

While in the service a new phase of my trouble made itself evident. That of the hematoma. The issue (Navy) leggings cut and aggravated the calves of my legs to such an extent that they ruptured vessels in my legs which turned out to be pronounced hemorrhages.

Hematoma of thigh, left hip—3 weeks.

Hematoma calves of both legs—leggings. June 1920.

Hemo-arthrosis of the left knee.

Sick two weeks.

Tonsilitis previous.

On giving hypodermics of phylacogen, patient had severe hemorrhages in the arm and legs. Treatment at that time was sodium salicylate in large doses and magnesium sulphate. Morphine hypodermically.

April 9, 1921.

Struck left ankle with bowling ball. Also turned his ankle on the ball field causing hemo-arthrosis of that joint.

Very severe pain, stiffness, swelling and temperature.

Treatment—Strontcylate, oxyl iodide.

Demobilized the joint by putting it in a splint.

There was some blood in the urine.

Patient recovered in three weeks.

Blood count was made.

Leucocytes 4000.

Frythyrocytes 5,500,000.

Haemoglobin 90.

Blood pressure.

Systolic 122.

Diastolic 78.

Pulse 84.

Exercise 110.

No heart lesion.

REFERENCES.

Billings' Forchheimer's Therapeutics.
Osler's Practice of Medicine.
DaCesta's Therapeutics & Medicine.

CLINICAL INDICATIONS FOR DOSAGE IN VACCINE THERAPY

The Laboratories of G. H. Sherman, M. D. (the Laboratories of applied immunology) offer the following suggestions for the practical and successful application of Polyvalent Bacterial Vaccines, with the hope that they will be helpful to you in your work while treating pyogenic bacterial diseases.

The size of each dose of Polyvalent Vaccines should be such as to excite an immunizing resistance to it by the patient's immunizing apparatus.

A fatigued immunity responds to a small initial dose. Such an immunity obtains in cases that are chronic, of long standing and carrying no temperature. This initial dose is for diagnostic purposes gives the patient's index

of reaction, and points out how relatively inadequate his immunity is.

Select the proper Sherman formula and give an initial dose of two-tenths mil (c.c.) Do not repeat until the patient has built up the greatest possible resistance against this dose. That is the day when the patient is at the peak of his immunity curve, and occurs in from one to ten days. On this day the patient has a decided feeling of well being, as compared to days previous to the administration of this dose.

The proper interval between doses is most important. Each dose should be given on the patient's good day, when he is at the height of his resistance, whether this day is the next day or the tenth day after giving the vaccine. The dose should be increased according to the patient's reaction. If the reaction is severe, showing that immunity was built up with difficulty, the next dose should be the same size.

A proper reaction is a slight feeling of malaise or drowsiness on the following day; this is an indication that the patient's immunity was not overtaxed in resisting this amount of antigen.

Dosage should be gradually increased, always being given on the patient's good day, until the amount given is one mil (c. c.) or more.

A vigorous condition of the cells concerned in immunity will respond to large doses frequently repeated; such cases are acute infections in the early stages, carrying a high temperature. The higher the temperature and more acute the stage of the infection, the larger and more frequently repeated should be the dosage. In such cases give 1 mil (c. c.) of the indicated Bacterial Vaccine every 12 to 24 hours, increasing the interval as the temperature falls.

Immunologic science teaches that these infections are overcome by cell secreted protective substances and that in conformity with nature's methods, cell stimulation for the rapid production of these protective substances is best accomplished when body cells are brought under the influence of Sherman's Polyvalent Bacterial Vaccines.

Data on request to physicians.

Bacteriological Laboratories of G. H. Sherman, M. D., Detroit, U. S. A.

THE JOURNAL
IS
YOUR FORUM—
WE INVITE YOU
TO UTILIZE
IT FOR THE
EXPRESSION OF
YOUR VIEWS
ON
MEDICAL SUBJECTS

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OF THE

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August, 1921

Editorials

CATOSTOMUS COMMERSONI

The history of mankind reveals some
 singularly consistent and inconsistent traits.
 We will leave its few consistencies for dis-
 cussion at some future time. This is about
 its inconsistencies.

One of the first familiar characters whom
 we meet in the history of the European peo-
 ples is the get-rich-quick stock salesman.
 He sold the Norse, the Goths, the Franks,
 the Alemanni, the Burgundians and all the
 strong, healthy and virile peoples who re-
 vitalized decadent Rome, all kinds of cheap
 trash and valueless trinkets. He took, in
 return, their fine amber, wool, weapons,
 bone, bronze and iron instruments. He ex-
 changed his shallow oriental finery for the
 necessities of life, for baskets, handiwork,
 blankets, horses and sheep. The unwary
 Teutons revelled for a short time in their
 newfound glitter and then, alas, they awak-
 ened to the painful realization that they
 were STUNG. Then they got mad, came

down into the civilization of southern Eu-
 rope and cleaned up on everything in their
 path.

Christopher Columbus, Vasco de Gama,
 Cortez, the Dakes—explorers and adventur-
 ers from all lands did the same with the
 American Indians. A piece of highly col-
 ored broken crockery brought the equivalent
 of a pound of gold. "New lamps for old,"
 they cried and so exploiters have cried the
 world over since man began.

With all the lessons of the past, man likes
 to be fooled. Solon said a big mouthful, to
 use the street vernacular, when he admon-
 ished us to know ourselves. But few have
 been able to masticate or swallow it, to say
 nothing of being able to master its conse-
 quent digestion. We all like to be fooled,
 some more than others. And among those
 who, as a class, are still living in the day of
 prehistoric European, and in the time of the
 American aborigine, are the class-called
 doctors. We have an unenviable reputation
 of furnishing a bright shining light for the
 vender of the world's worthless goods to
 shoot at. In other words, brethren, as
 much as it hurts, we are suckers—Catostomus
 Commersoni—members of that great
 catostomidae species which derives its
 sustenance by clinging through suction to
 anything that comes in its way—members
 of that great castomidae species which de-
 spite repeated warnings swallows the hook
 so clumsily baited with Bohemian oats.

We know this and laugh at it. We have
 been told it many times. We are not con-
 sidered good business men. Perhaps that is
 a compliment, perhaps it isn't. Some of us
 would rather know something about the
 anatomy of the human being than that of
 the daily stock record. Some of us get more
 honest happiness out of relieving suffering
 than does the mightiest money captain out
 of his millions. But when a joke becomes
 a cold reality, a sinister danger, a patent and
 indelible fact, it is time we pay attention to
 the smoke and see what causes the fire.

All too frequently we encounter a doctor
 advanced in years, with mind and body
 wrecked by the demands of an active and
 prosperous life, who is slowly winding his
 way to the end of the trail and eking out
 an existence that is part charity and part
 none too efficient service. He was a cap-
 able man and had a good practice. He had
 friends by the score—friends who respected
 him. He was appraised as a successful phy-
 sician who had made enough to bring credit
 to himself and his profession.

Then from out of the Babylonian revelry
 comes the glib stock salesman who writes

before the incredulous eyes of the doctor that he has been weighed and found wanting. Dr. Faustus thinks it all over. He wants to be young again, he wants the youth, the comfort, the luxury that money can buy. He knows from his books that it can't be done—legitimately. Money is his Marguerite and he wants her. So he takes a chance. Not having the prescription among his own formulas, he takes that offered him by the speculator.

Then enters reverses. He passes the half century—Osler's joke becomes a terrible reality. The speculation, like most of those in which doctors engage, goes wrong. Years of hard-earned funds are wiped out. Death enters the family circle and claims, perhaps, his closest and best bet—the wife. His son paid the price in the World War, perhaps his life, perhaps his health. The professed friends cool with the passing of the years. The strain is too much for the body and gradually comes the inevitable physical collapse. The end is in sight but there still remains a part of the rocky road where mile-stones become tomb stones mocking the weary traveler to the trail's end.

A gloomy picture, but true—all too true. It may not have been your lot but you don't have to look far to find its parallel. And, sadly, the trend is not on the wane. It's on the increase. More money has been lost out of the pockets of professional men and women this year than for many years past. We are living in a period of speculation. We want to take a chance.

We preach to our patients and to the public—don't take a chance. "Safety" is a modern household word. How safe are you against the temptations which may undermine both your mind and body? Speculation is a mental disorder not far removed from kleptomania. You would not speculate with a life—why speculate with your own life? You would not engage in a business concerning which you know nothing. Why engage in a business concerning which even those with whom you associate know as little as you do?

We seem to think it strange that we are not good investors. Yet, were this a physical or biological problem it would contain nothing which could not be seen with the naked eye. We know the influence of organic development in species. Experiments have shown us that we can regulate almost life itself through the accelerating or retarding of organic action. Likewise our development has been along a line foreign to that which is required of the investor. We

have not permitted a development of that acumen necessary to a complete understanding of business logic. There is no reason to be ashamed of this. Likewise, there is no justification for ignoring it. Biologically, we have no grievance against the frog for not having wings or against the duck for seeking water. We need go no further than the mutations of Waagen to know our place. And our place, as followers of an established science is not that of the financial trickster who knows more about human gullibility than he does about the securities he peddles to unsuspecting victims.

Every physician has, or should have, sound friends who know the ramifications of business. Any good investment banker, any conservative bondhouse—and there are many of them—can furnish that which the doctor lacks in business analysis. All we need is a little common sense of the same variety that the patient displays when he consults his physician about an ailment of which he knows nothing. Speculation is a doctor's ailment which can be successfully treated by specialists. But for a good prosperous doctor to grab at any get-rich-quick offer is like the much discredited sufferer who avails himself of the services and nostrums of the quack.

Look before you cut, boys, and think before you leap.

PREVENTION AND RELIEF OF HEART DISEASE

In 1915, there was organized in New York The Association for the Prevention and Relief of Heart Disease. The announced object of the organization is: To gather information upon heart disease; to develop and apply measures which will prevent heart disease; to seek and provide occupations suitable for patients with heart disease; to promote the establishment of special dispensary classes and better hospital care for patients with heart disease. These are but the leading objects, there are others which seek for the development of the organization.

At first thought one is inclined to belittle such a movement and make the appraisal that there is but small need for such an organization. Let us stop and consider. Two per cent of the persons examined by insurance companies are rejected because of serious heart defects. Two per cent of industrial workers are found to have serious heart lesions. Two per cent of the drafted men were rejected on account of heart lesions. Almost two per cent of the school

children examined show serious heart defects. On that basis there are 2,000,000 persons, in this land of ours, who suffer from serious heart defects. For the past two years, in the Registration Area, organic heart disease has caused more deaths than tuberculosis. Under 25 years of age organic heart disease causes as many deaths as typhoid fever. Between 25 and 34 years organic heart disease causes as many deaths as lobar pneumonia. Between 35 and 44 years organic heart disease causes more deaths than Bright's disease. After 45 years organic heart disease shows a higher death rate than any other cause.

In organic heart disease we have a condition equal in importance to tuberculosis and cancer. These facts just recited may be common knowledge to some of the profession but not to all. They demonstrate the need for an association whose objects we have recited.

This morbidity and mortality can be reduced. What is needed is education of the people and the profession. Then there must follow systematic physical examinations yearly or better, semi-annually. The early detection of foci of infection and their removal is extremely essential. Those afflicted require supervision, possibly change of occupation and mode of living. The establishment of cardiac clinics and providing of cardiac beds or sanatoria are of equal importance. Preventative measures must be imparted. The field for activity is broad and if developed, can and will accomplish startling results as have other organized movements that sought to lessen and eradicate physical afflictions.

We are proffering these possibilities for the consideration of our members. Are you ready to undertake this organized effort in Michigan?

PUBLICITY

On several occasions we have commented upon the need of the right kind of Publicity for the medical profession and for the education of the public. The sentiment to such a policy is becoming more favorable and there are now under consideration plans for the development of Educational Measures for the Enlightenment of the Public in regard to medical problems and preventative medicine.

In that connection we call attention to the following memorial presented to our House of Delegates by the Committee on Ethics of the Wayne County Medical Society:

May 21, 1921

House of Delegates,
Michigan State Medical Society,
Gentlemen:

The Committee on Ethics of the Wayne County Medical Society hereby begs to memorialize your honorable body along the lines of the broadened education of the public and the diffusion of a well-digested, well-rounded medical propaganda.

This Committee feels most strongly that the medical profession owes the great public much. From the public the profession receives its livelihood and is accorded its high social standing. In return, there is doled out to it driblets of medical lore and droplets of medical information. As opposed to the knowledge doled out by the regular profession, we are confronted with a wide propaganda from all the cults and isms and schisms in the world. To them, science means nothing and the art of medicine is a by-word. Medical mis-information is handed out in bucketfuls because there is no truth in it. Through the medium, however, of the press, billboards, circulars, hand-bills and letters through the mails, travestition upon scientific discussions and reports of alleged cures through quackery methods are handed out to an undiscerning public. If we reprove the public for its undiscernment, it retorts that what it receives from the quacks is the only information on medical lines that it can get, and that if the medical profession desires to instruct it scientifically, they should proceed to do so with the same freedom as the chiropractics, osteopaths, et id genus omne.

The Committee feel that the public has truth in what they say, and their arguments come to them with force and power. We beg to recommend to your honorable body that legislation be enacted whereby power shall be given to the various constituent committees and bodies of the society that propaganda along the lines of general or special medical education to the public, vouched for as ethical and right, be offered to them. We desire that suitable safeguards be thrown around this propaganda and its exponents so that neither a person, nor groups of persons, shall be unwarrantably advertised, and so that the spirit of medical morals existing in the societies of the state and the country during the past many years, shall in no way be injured or transgressed. We believe that ethically, the principles we have inculcated are right and correct, and that the only necessity in connection with the matter is to observe the

correctness of etiquette and the rectitude of morals which has always enwrapped our societies.

It has seemed to this Committee that a memorial such as this should come from a committee such as ours, so that the society may understand that the members constituting the Committee are in whole-hearted sympathy with the development of propaganda just indicated.

Respectfully submitted,

(Signed) W. M. Donald, M. D.
" Herman Sanderson, M. D.
" Delos L. Parker, M. D.
" Frank A. Kelly, M. D.

Ethics Com. Wayne County Med. Society.

Editorial Comments

With one mother dying for every 205 babies born in New York city, with an obstetrical death rate second only to that of tuberculosis, with 40 to 50 per cent of obstetrical deaths due to sepsis, with a mortality today the same as twenty years ago and with 61 per cent of all gynecological surgery as a direct result of poor obstetric practice—with these facts confronting us, it is indeed imperative that obstetrical practices must be improved.

Just where the fault lies, what the remedy must be, we are not prepared to state. It is a fact that obstetrical practice has not kept abreast with our progress in other lines. We are inviting a discussion of the problem.

Of the creating of examining boards there seems to be no end. Just as soon as a representative number of men pursuing some single line or specialty get together and form an organization up pops a movement to create a special licensing board. Now come the radiologists who wish to eliminate the "lunatic fringe"—a bunch of incompetents, invincibly ignorant but thoroughly conscienceless in their pursuit of "easy money." It is observed that a law is passed, a board is created, examinations are conducted, certificates are issued and the fee is collected. Then the movement ends for no one desires to file complaints and the board states it has no police powers, or, has no funds to carry out the police power. So in the end, what is the use?

Again new advertisers appear in our advertising pages. We earnestly solicit your patronage for not only these new firms but also for those who have long been our patrons. It is they who make The Journal possible. Write to them and tell them why you are buying from them.

The other night, while at a summer resort, a lad of 23, unable to swim stepped in a deep hole and before anyone could reach him, sank. After 20 minutes of persistent diving, on the part of the Coast Guard crew, the body was recovered. Immediate examination revealed completely dilated pupils, cyanosis and no heart action. Artificial respiration was undertaken to empty the lungs of water. Cardiac and respiratory stimulants were given by hypodermic. Heat and massage of the extremities were applied. After a persistence with these measures for about a half hour we advised

discontinuance because of failure to restore cardiac or respiratory action. The captain of the Coast Guards stated that they were compelled by regulation to continue artificial respiration for two hours. The query we wish to make is—what is the basis for such a regulation? It has been our experience that whenever heart action is arrested in a person by reason of drowning or because of an electrical shock, it has never been possible to restore it. We have never heard of a method that would or ever did. Startling head lines in newspapers tell at times of resuscitation after two or more hours of effort, but in none of these cases has there been a complete cessation of cardiac action. We invite the report of cases, if there are any, where such a person has been revived and in whom careful examination revealed that at the time resuscitation was undertaken all heart action had ceased. We believe in making every effort to revive a person, but can see no reason why these efforts should be empirically persisted in for two hours. We repeat, as we stated several years ago when discussing the value of the pulmometer, that arrest of cardiac action for a period of three to five minutes precludes the reestablishment of cardiac function. When reports to the contrary are made it may be assumed that complete arrest of heart action did not exist. If we are in error we solicit correction.

Those who served in the Medical Corps are urged to file their application for their share of the state bonus. Legion posts or the Adjutant Generals office at Lansing will supply you with the necessary blanks. These blanks must be filled out with careful detail and every question answered. When you receive your voucher invest it in a good bond and with the interest money that you receive from that investment, purchase a subscription to a good Medical Journal, preferably The Journal of the American Medical Association, or a recent text book. By so doing you will obtain the greatest good from your bonus. Never mind a new set of tires for the old tin liz—these can be gotten any time. Remember, we advised a good bond, not a stock gamble.

Something for nothing. As a rule we look askance at such offers. There are times when the offer is genuine, with no strings tied to it. Such an instance presents this month in our advertising pages. Mead & Johnson offer to send you free a Physician's File Box. A postal card, one cent, brings it to you. Will you not write to them and thus also demonstrate that advertising in our Journal pays?

In running through our advertising pages you will find that if you invest about 10 cents you will receive in return, samples, literature and other useful articles to the value of \$6.00. Surely you are willing to spend 10 cents to receive merchandise to the value of \$6.00. Please aid us in holding our advertisers, and don't forget to write to our new advertisers, this month.

Deaths

Doctor Harlow B. Drake was born in Freemont, Indiana in 1848 and died in Detroit, July 5, 1921. His father, Doctor Elijah H. Drake, moved to Detroit in 1852. Doctor H. B. Drake was educated in the Detroit Public schools. He graduated from the School of Technology in Boston in 1869. In 1873 he received the degree of Doctor of Medicine from the Hahnemann Medical College and Hospital of Philadelphia. He at once came to Detroit and

began the practice of Medicine. Eight years later the doctor was obliged to give up his work because of broken health and went west to live on a ranch. After seven years of outdoor life, fully recovered in health, he settled in Portland, Ore. He remained there till 1901 when he returned to Detroit, where he has practiced ever since.

He was a member of the Wayne County Medical Society, the Michigan State Medical Society, the American Medical Association, the Detroit Practitioners club, the Homeopathic Medical Society of Michigan, the Oregon Homeopathic Medical Society and the American Institute of Homeopathy. He was also a member of the Grace Hospital Staff, the Sons of the American Revolution and the Union Lodge of Masons.

Doctor Drake married Miss Eleanor C. Swain, who died in 1910. He is survived by two daughters, Mrs. E. N. Johnston and Miss Eleanor Drake.

Devotion to his profession and untiring care of his patients are the outstanding characteristics in the long and successful career of Doctor Harlow B. Drake.

State News Notes

COLLECTIONS

Physicians Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Reference any Bank in Battle Creek.

For Sale—Drugs, Instruments, Office Furniture, of the late Dr. J. J. Defendorf of Ionia. Splendid opening for a successor. Address Mrs. J. J. Defendorf, 110 W. Main St., Ionia, Mich.

The annual meeting of the Upper Peninsular Medical society will be held Aug. 25 and 26 at Marquette, Mich. The following program has been prepared:

President's Address—R. A. Walker, M. D., Menominee.

Dentigerous Cysts, with lantern slide demonstration—W. J. Anderson, Iron Mountain.

A Case of Chronic Ether Poisoning—A. F. Fisher, Hancock.

Pre-antiseptic Period—A. I. Lawbaugh, Calumet.

State Hospital Activities—E. H. Campbell, Newberry.

Fads and Fancies in Medicine—F. McD. Harkness, Marquette.

Tropical Medicine—A. K. Bennett, Marquette.

Treatment of Pneumonia with Radical Changes—R. A. Burke, Palmer.

Doctors R. W. Streat, A. McArthur and R. A. Stephenson have been appointed part time city physicians of Flint.

Dr. M. W. Clift has been elected president of the Flint Rotary club.

Dr. Lafon Jones has resigned as school physician of Flint and has engaged in private practice, limiting his work to Pediatrics.

Dr. C. B. Burr has returned to Flint after spending the winter in Los Angeles.

Dr. F. A. King has re-located in Benton Harbor.

Doctor David Inglis, who has regained his health,

has resumed his practice at Ann Arbor, Mich. Practice is limited to office and consultation work by appointment in nervous diseases. Offices located at 1211 Prospect St., telephone 2494-J.

Doctor Joseph Johns has been appointed city physician and health officer of Ionia.

Dr. Walter J. Wilson of Detroit has moved to new offices in the David Whitney building. He has installed a new electro-cardiograph.

Doctor R. J. Hutchinson of Grand Rapids is spending July and August at his summer home in Canada.

Dr. and Mrs. J. R. Rogers of Grand Rapids sailed for Europe the last of July and will be abroad for two months.

Dr. C. W. Edmonds has resigned as secretary of the Faculty of the Medical Department of the University.

Dr. J. A. Humphrey has resigned as health officer of Lansing.

Dr. D. H. Riffer has located in Petoskey.

Dr. J. K. Parish and Miss Evelyn Boss were married June 21 and will make their residence in Hermansville.

Dr. and Mrs. W. A. Evans of Detroit are spending July and August in England and France. The doctor will visit the principal radiological laboratories.

Doctors Guy L. Kiefer and Frank B. Tibbals of Detroit attended the 25th reunion of their class at Ann Arbor, June 28.

Dr. and Mrs. Carl F. Muenz of Detroit opened their summer cottage at Pearl Beach, July 1.

Mrs. Guy L. Kiefer of Detroit opened her summer home at Mackinaw the early part of July. Dr. Kiefer will spend the month of August there.

Mrs. H. R. Varney of Detroit is spending the summer at the Le Cheneaux club. Dr. Varney will join her in August.

Dr. O. S. Armstrong of Detroit will spend the month of August with his son at Nantucket.

Dr. J. B. Kennedy of Detroit will spend the month of August touring in Ontario and visiting with his many friends.

Doctors R. J. Baskerville and W. Y. Kennedy of Detroit will spend the month of August cruising in Georgian Bay.

Dr. and Mrs. Charles Kennedy and family opened their cottage at Pearl Beach the first part of July. During August the doctor will spend the "week-ends" there.

The University of Michigan conferred in June the degree of Doctor of Laws on Sir Auckland Geddes, British ambassador to the United States.

He was Professor of Anatomy at Edinburgh and later at McGill University. During the World War he served the British government as Director of Recruiting, as Minister of National Service, and as President of the Board of Trade.

Dr. and Mrs. G. C. Caron and Miss Margaret Caron of Detroit spent two weeks in July at Burt Lake.

Dr. George Lowrie of Detroit will take a two weeks trip through the Georgian Bay region in August.

Dr. D. A. MacLachlan of Detroit was elected Honorary President of the American Institute of Homeopathy at its 77th annual meeting in Washington, D. C., June 18-25.

Dr. Carl Eberbach has been appointed assistant to Dr. Hugh Cabot, dean of the Medical Department of the University of Michigan.

The University of Michigan in June conferred the degree of Master of Arts on Dr. Harry L. Canright, dean of the Medical Department of the university of West China. The doctor graduated from the Medical Department of the University of Michigan in 1889.

Dr. Emma E. Bower of Port Huron was elected President of the Michigan Woman's Press Association, July 1.

Dr. John B. Rieger was married to Miss May Hoover June 23. Both the doctor and his wife have been and are residents of Detroit.

Doctors J. W. Vaughan, T. B. Cooley, P. Morse and Alpheous Jennings left Detroit shortly after the Fourth for a sailing trip in northern Michigan. They were gone one month.

The Burns club of Detroit held their annual banquet at the Hotel Tuller, July 23. Dr. J. B. Kennedy acted as toastmaster.

Dr. and Mrs. L. J. Hirschman of Detroit sailed July 5, on the Empress of Britain from Quebec for a several month's trip to England and the Continent. Dr. and Mrs. A. D. McAlpine of Detroit also sailed on the same boat.

Dr. and Mrs. R. M. Richards of Detroit spent their summer vacation at the Mettawas, Kingsville, Ontario.

Mr. Tracy Waters Southworth, son of Dr. and Mrs. C. T. Southworth of Monroe, was married to Miss Louise I. Lauer, June 16. They will make their home in Monroe.

The annual meeting of the Michigan G. A. R. was held in Flint, June 23. Dr. Robert LeBaron of Pontiac was elected department medical director.

Dr. and Mrs. Francis Duffield of Detroit opened July 1, their country house "Stoney Creek" near Rochester, Mich.

The Faculty of the Medical Department of the University of Michigan gave a dinner, June 23, at Barton Hills Country club in honor of Dr. and Mrs.

V. C. Vaughan. Dr. Frederick Novy, for the Faculty, presented Mrs. Vaughan with a pin, set with diamonds and sapphires.

Mary Sekelyn of Detroit who has been giving pink, green and blue bath as a cure for tuberculosis in her bath house on the Seven Mile road near Woodward Avenue, was found guilty of practicing medicine without a license. Judge Heston of the Recorders Court sentenced her June 25, to six months, without fine, in the Detroit House of Correction. The case was investigated by Maj. Roehl, special investigator of the Detroit Department of Health and by Charles Lambert and William Quinn, detectives of the Prosecutor's staff.

Dr. and Mrs. Morrell M. Jones left Detroit in June for a tour through New York and Massachusetts. They will attend the reunion of the 26th Division in Boston with which the doctor served during the World War.

Dr. and Mrs. F. B. Tibbals of Detroit opened their cottage at Hickory Island the last of June. The doctor spends his "week-ends" there.

Dr. and Mrs. H. N. Torrey left Detroit July 22, for a two weeks' cruise on Lake Superior on their yacht Tamarack.

Dr. and Mrs. J. Henry Lanchester, formerly of Detroit, have returned from Italy and have opened their cottage at Manchester-by-the-Sea.

Henry F. Vaughan, Commissioner of Health of Detroit, announced July 7 that the new Detroit Tuberculosis Sanatorium at Northville will open October 1. The delay is caused by the installation of equipment.

Dr. and Mrs. A. Milton Humber left Detroit the early part of July for an extended tour through the Canadian northwest and Alaska. They will be gone two or three months.

Dr. and Mrs. Max Ballin of Detroit spent the month of July at the Rockmere Hotel, Marblehead, Mass.

Mrs. T. B. Cooley and family left Detroit July 9 for Crystal Lake where they will spend the summer. Dr. Cooley will join them later.

Dr. and Mrs. E. C. Van Syckle and daughter of Detroit spent the summer in their cottage in Kingsville-on-the-Lake, Ontario.

Dr. Alfred S. Burdick has been elected to fill the vacancy as president of The Abbott Laboratories caused by the death of Dr. W. C. Abbott. He is a graduate of the Alfred University, Alfred, N. Y. and Rush Medical College, Chicago. He has been closely associated with The Abbott Laboratories for over 17 years, and for the past six years has been vice president and assistant general manager.

Dr. G. M. Byington has resigned from state and federal public health work on July 1 and will resume practice at Charlotte.

Mrs. E. H. Webster, wife of Doctor E. H. Webster of Sault Ste. Marie, Mich., died at Johns Hopkins Hospital, on June 14.

County Society News

ACADEMY OF SURGERY OF DETROIT

The fifth regular meeting of the Academy of Surgery of Detroit was held at the Wayne County Medical Building on Friday evening, June 3.

The program for the evening was as follows:

Case report, "Wandering Liver," and "Skin Graft of the Leg," by Dr. Wyman Barrett. Discussion by Drs. Bell, MacCraken and Walker.

The paper of the evening was given by Doctor W. H. MacCraken, dean of the Detroit College of Medicine and Surgery, on "Electrolytic Decomposition and Ionic Functions in the Human Body." Discussion by Doctors Bell, Yates, Chas, Kennedy and McLean.

Election of officers for the year 1921-1922 was as follows:

President—F. B. Walker.

First Vice President—Frank Kelly.

Second Vice President—H. K. Shawan.

Secretary-Treasurer—Ira G. Downer.

The vacancy on the Executive Committee left by Dr. MacMillan's term of office expiring was filled by election of Angus McLean for a term of three years.

The following men were received into Active membership: Milton Darling, R. J. Palmer, W. D. Barrett, John Bell, Louis Hirschman, Alexander Stirling, W. R. Clinton, George Meyers, Stephen Knight, W. K. Shawan, W. Yates and George Potter.

The following men were received into Associate membership: H. E. Randall, Flint, Mich.; Carl Fuller, Windsor, Ont.; F. C. Warnshius, Grand Rapids, Mich.

The following men were received into Honorary membership: Admiral William C. Braisted, Washington, D. C., and Maj. Gen. Merritt W. Ireland, Washington, D. C.

Motion made and carried that the regular time of the meetings be changed to the second Friday of the month, the next meeting coming on Sept. 9.

Motion to adjourn. Carried.

Ira G. Downer, Secretary.

REPORT OF TUSCOLA COUNTY MEDICAL SOCIETY

The Tuscola County Medical Society met at the Hotel Montague at Caro, Mich., June 15.

Senator Johnson of Fostoria, Mich., gave us a talk on his experience in the last session of the legislature.

Dr. Jones of Bay City, Mich., read a very interesting paper on "Radium, Its Use in Malignant and Non-Malignant Growths." The paper was well prepared and well received.

It was decided to have a picnic at Bay Port, Mich., on July 14th to which we were to take our families and have a good time. Huron county physicians were also invited. The secretary was instructed to make necessary arrangements with Dr. Howell of Bay Port for the supper.

H. A. Barbour, Secretary.

GENESEE

The Genesee County Medical Society met Wednesday, June 15, President Orr presiding. Dr. Frankwood E. Williams, New York, Associate Director of the National Committee for Mental Hygiene, addressed the society on "The Relation of Medicine to Criminology." He referred to the part psychiatry is playing in the industries in the east. Sub-

normal types should be identified in the schools, and such individuals should have training in special schools or institutes. Many psychopathic criminals who are repeaters should have indeterminate sentences as they can get along in community life if properly supervised by a psychopathic clinic. He referred to the changing activities of the psychiatrist, who is no longer entirely concerned with the chronic insane, but is applying his knowledge to help solve many social problems that constantly come up in the courts, schools and industries.

W. H. Marshall, Secretary.

Book Reviews

RADIENT ENERGY AND THE OPHTHALMIC LENS.
Frederick Booth. Cloth, 226 pages, 230 illustrations, price \$2.25. P. Blakiston's Son & Co.

Mr. Booth, in collaboration with others and aided by his large experience and a study of the literature, presents in this volume the principles of Optics. He also takes up the eye from the optical standpoint—accommodation, convergence, the lens, transposition, etc. The higher mathematics have been omitted whenever possible. For the better understanding of the optics he has included radient energy, taking in connection there with the ether theory, light, actinic, heat and the various other light rays, etc. The various theories of light are carefully explained and illustrated by self-explanatory drawings. The subject matter is presented in a plain and direct manner with omission of superfluous words, obsolete methods and the exclusion of illustrative cases.

The book presents a compilation of a large number of facts taken from available sources. Nothing is left to the imagination and the book forms a concise and comprehensive compendium for reference.

MANUAL OF OPERATIVE SURGERY: John F. Burnie, M. D. Eighth edition, revised, enlarged. 1628 illustrations. P. Blakiston's Son & Co., Philadelphia. Price \$12.00.

With a reputation well earned and maintained through its seven editions, this eighth edition, if anything, surpasses the others. It is a text that every surgeon should own for he can turn to it when in trouble and receive sought-for assistance. The greatest changes have been made in the chapters on Thoracic, abdominal, and plastic surgery.

The text is up to date in practically every detail. Some obsolete procedures are incorporated and might well have been omitted. However, they serve as exhibitions of progress when compared with the recommended procedures.

This new edition merits well a position among our leading reference texts. In acquiring it one will frequently depend upon the information it imparts. We commend it heartily.

OPERATIVE SURGERY: John J. McGrath, M. D., F. A. C. S., Professor of Surgery, Fordham University. Sixth revised edition. 836 pages, 369 illustrations. Cloth, price \$8.00. F. A. Davis Co., publishers.

This text book for a number of years has met with favorable reception by the profession and is now presented in its sixth edition thoroughly revised and up to date. It maintains all its previous merit for existance and added thereto we find that it is complete in almost every detail in relation to the recent advancements and our present day principles of surgery.

The Secretary of the Society will please notify the State Secretary immediately of any errors or change in these offices.

COUNTY SOCIETIES

BRANCHES OF THE MICHIGAN STATE MEDICAL SOCIETY

County	President	Address	Secretaries	Address
ALPENA	A. E. BONNEVILLE	Alpena	D. A. CAMERON	Alpena
ANTRIM				
CHARLEVOIX	R. B. ARMSTRONG	Charlevoix	B. H. VAN LEUVEN	Petoskey
EMMETT				
BARRY	C. H. BARBER	Hastings	GUY KELLER	Hastings
BAY				
ARENAC	G. M. McDOWELL	Bay City	L. F. FOSTER	Bay City
IOSCO				
BENZIE	J. M. STONE	Honor	E. J. C. ELLIS	Benzonia
BERRIEN	J. F. CROFTON	St. Joseph	R. N. DUNNINGTON	Benton Harbor
BRANCH	G. H. MOULTON	Coldwater	A. G. HOLBROOK	Coldwater
CALHOUN	W. S. SHIPP	Battle Creek	WILFRID HAUGHEY	Battle Creek
CASS	G. W. GREEN	Dowagiac	JOHN H. JONES	Dowagiac
CHEBOYGAN	A. M. GEROW	Cheboygan	C. B. TWEEDEALE	Cheboygan
CHIPPEWA				
LUCE	T. BENNETT SCOTT	St. Ste. Marie	A. C. LEMON	St. Ste. Marie
MACKINAW				
CLINTON	H. D. SQUAIR	St. Johns	D. H. SILSBY	St. Johns
DELTA	L. P. TREIBER	Bark River	G. W. MOLL	Escanaba
DICKINSON-IRON	L. E. BOVIK	Crystal Falls	B. T. LARSON	Crystal Falls
EATON	STANLEY STEALY	Charlotte	PHIL H. QUICK	Olivet
GENESEE	J. WALTER ORR	Flint	W. H. MARSHALL	Flint
GOGEBIC	A. W. ERICKSON	Ironwood	C. E. ANDERSON	Ironwood
GRAND TRAV	H. B. KYSELKA	Traverse City	E. F. SLADEK	Traverse City
LEELANAU				
HILSDALE	T. H. E. BELL	Reading	D. W. FENTON	Reading
HOUGHTON				
BARAGA	D. E. GODWIN	Houghton	A. D. ALDRICH	Houghton
KEWEENAW				
HURON	W. B. HOLDSHIP	Ugly	C. J. HERRINGTON	Bad Axe
INGHAM	FRED J. DROLETT	Lansing	MILTON SHAW	Lansing
IONIA	G. A. STANTON	Belding	J. DEFENDORF	Ionia
GRATIOT				
ISABELLA	L. J. BURCH	Mt. Pleasant	E. M. HIGHFIELD	Riverdale
CLARE				
JACKSON	E. S. PETERSON	Jackson	T. E. HACKETT	Jackson
KALAMAZOO AC.				
KALAMAZOO	J. H. VAN NESS	Kalamazoo	B. A. SHEPARD	Kalamazoo
VAN BUREN				
ALLEGAN				
KENT	J. S. BROTHERHOOD	Grand Rapids	F. C. KINSEY	Grand Rapids
LAPEER	I. E. PARKER	Dryden	C. M. BRAIDWOOD	Dryden
LENAWEE	C. H. WESTGATE	Weston	O. N. RICE	Adrain
LIVINGSTON	H. F. SIGLER	Pinckney	Jeanette M. BRIGHAM	Howell
MACOMB	WM. KANE	Mt. Clemens	V. H. WOLFSON	Mt. Clemens
MANISTEE	H. D. ROBINSON	Manistee	Kathryn M. BRYAN	Manistee
MARQUETTE				
ALGER	I. SICOTTE	Marquette	H. J. HORNBOGEN	Marquette
MASON	LOUIS PELLETIER	Ludington	C. M. SPENCER	Ludington
MECOSTA	O. H. McDONALD	Remus	D. MacINTYRE	Big Rapids
MENOMINEE	R. A. WALKER	Menominee	C. R. ELWOOD	Menominee
MIDLAND	G. SJOLANDER	Midland	E. J. DOUGHER	Midland
MONROE	C. T. SOUTHWORTH	Monroe	HERBERT LANDON	Monroe
MONTCALM	E. R. SWIFT	Lakeview	F. A. JOHNSON	Greenville
MUSKEGON	J. T. CRAMER	Muskegon	E. S. THORNTON	Muskegon
NEWAYGO	P. T. WATERS	White Cloud	W. H. BARNUM	Fremont
OAKLAND	H. A. SIBLEY	Pontiac	A. V. MURTHA	Pontiac
OCEANA	F. A. REETZ	Shelby	C. H. BRANCH	Shelby
O. M. C. O. R. O.				
OTSEGO				
MONTMORENCY				
CRAWFORD	STANLEY N. INSLEY	Grayling	C. C. CURNALIA	Roscommon
OSCODA				
ROSCOMMON				
OGEMAW				
ONTONAGON	W. B. HANNA	Mass City	J. S. NITTERAUER	Ontonagon
OSCEOLA	AUGUST HOLM	Ashton	T. F. BRAY	Reed City
LAKE				
OTTAWA	E. E. BRONSON	Ganges	A. LEENHOUTS	Holland
PRESQUE ISLE	BASIL G. LARKE	Rogers	W. W. ARSCOTT	Rogers
SAGINAW	J. D. BRUCE	Saginaw	A. E. LEITCH	Saginaw
SANILAC	J. W. SCOTT	Sandusky	C. E. JEFFERY	Deckerville
SCHOOLCRAFT	A. NELSON	Manistique	E. R. WESTCOTT	Manistique
SHIAWASSEE	A. L. ARNOLD	Owosso	W. E. WARD	Owosso
ST. CLAIR	W. H. MORRIS	Port Huron	J. J. MOFFETT	Port Huron
ST. JOSEPH	DAVID KANE	Sturgis	FRED LAMPMAN	White Pigeon
TRI-COUNTY				
WEXFORD	C. E. MILLER	Cadillac	W. JOE SMITH	Cadillac
KALKASKA				
MISSAUKEE				
TUSCOLA	H. A. BISHOP	Millington	H. A. BARBOUR	Vassar
WASHTENAW	H. H. CUMMINGS	Ann Arbor	J. A. WESSINGER	Ann Arbor
WAYNE	JAMES E. DAVIS	Detroit	B. C. LOCKWOOD	Detroit